

**BISON CONTROL AREA PROGRAM
ANNUAL REPORT OF SURVEY ACTIVITIES
NOVEMBER 2007 – APRIL 2008**



Northwest
Territories Environment and Natural Resources



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ABSTRACT

Bovine tuberculosis (*Mycobacterium bovis*) and brucellosis (*Brucella abortus*) are endemic in bison (*Bison bison*) herds in and around Wood Buffalo National Park, and the adjacent Slave River Lowlands. In 1987, the Bison Control Area (BCA), along with a surveillance program, was created to minimise the risk of disease transmission to the disease-free Mackenzie and Nahanni–Liard herds in the Northwest Territories. During the 2006-2007 surveillance season, we used a Cessna 337, to fly 12 shoreline patrols along the northern boundary of the BCA on a weekly basis from December 20, 2006 to April 12, 2007. Total survey time during shoreline patrols was 26.5 hours. We used a Cessna 210 to fly one semi-comprehensive aerial survey of BCA Zone I and partial Zone II, from the 13 - 16 of February 2007; total survey time was 18.5 hours. From 19 - 24 March 2007. We used a Cessna 210 to fly the annual comprehensive survey of BCA zones I and II; total survey time was 35.9 hours. In total, we flew 92.8 hours including ferry time to systematically survey the BCA during the 2006– 2007 surveillance season and did not observe any bison (or their sign, i.e., fresh tracks and/or feeding craters) within the BCA during our surveillance flights.

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INTRODUCTION

Free-ranging bison (*Bison bison*) in and around Wood Buffalo National Park (WBNP) and the Slave River Lowlands (SRL) are infected with bovine tuberculosis and brucellosis (Tessaro *et al.* 1990, Joly and Messier 2001) (Figure 1). These northern bison herds contracted the two cattle diseases when 6,673 diseased plains bison were moved from the National Buffalo Park at Wainright, Alberta to WBNP between 1925 and 1928 (Fuller 2002). Risk of infection to healthy free-ranging bison as well as commercial cattle and bison herds has been a chronic management problem ever since (see Connelly *et al.* 1990, APFHRAN 1999, RAC 2001). Recent results from Jolly and Messier (2004) showed that bison within WBNP have overall apparent prevalence rates of 49% and 31% for tuberculosis and brucellosis respectively. These results suggest that the diseases will continue to persist in the affected bison in and around WBNP and further supports the need to mitigate the risk of infection to the health status of the Mackenzie Wood Bison herd (Tessaro *et al.* 1993, Nishi 2002), the presumed disease free status of the Hay-Zama herd located in northwest Alberta, and the Nahanni-Liard herd located near the Mackenzie Mountains (Gates *et al.* 1992a) (Figure 1). The diseased bison in and around WBNP also present the most important limiting factor to the reestablishment of other healthy free-roaming herds in the region that could contribute to the resource-based economies of surrounding communities (Gates *et al.* 2001b).

In March 1996, because of ongoing concerns of the commercial bison industry, the Canadian Bison Association requested the Animal, Plant and Food Health Risk Assessment Network (APFRAN), Canadian Food Inspection Agency conduct a formal risk assessment. The objective was to determine the risk of infection with tuberculosis and/or brucellosis from bison in WBNP and surrounding area during a 12 month period, for each of three "at risk" groups: commercial cattle, commercial captive bison and disease-free, free-ranging bison. In January 1999, APFRAN completed the risk assessment and concluded that disease-free, free-ranging bison had the highest probability of becoming infected with bovine brucellosis and/or tuberculosis (APFRAN 1999).

As the APFRAN (1999) disease risk assessment was not based on terrain and habitat variability, a follow-up research project was initiated to compile local knowledge on bison movement and distribution around WBNP, define the relative influences of biophysical and management factors, and to integrate quantitative and local qualitative data on biophysical factors into a bison movement model (Gates *et al.* 2001a, Mitchell 2002). The research focused on bison movements and distribution in the region in order to provide a model and maps for informing the development of disease risk management measures and to update the APFRAN risk model. The results suggested that the highest likelihood for bison dispersal occurred in corridors that were parallel to the Peace River in the area of Fort Vermillion, and with the broadest network of corridors between High Level and WBNP.

Additional results from Gates and Wierzchowski's (2003) movement corridor analysis indicate that potential movements of bison between WBNP and the Mackenzie Bison Range are most likely to occur in the northern section of surveillance Zone I in the BCA. Gates and Wierzchowski (2003) recommended that in addition to the in-situ surveillance of BCA Zone I, aerial surveillance of the area between Buffalo Lake and Highway #5 should be conducted to ensure that the disease-free Mackenzie herd do not come into contact with infected bison that may occupy this area. Due to the propensity of bison to use meadows near lakes and rivers, they also suggested that aerial reconnaissance of the area on the northwest side of Buffalo Lake might be worthwhile. Continuation of shoreline and surveillance surveys is critically important for early detection of bison in the control area, due to the ongoing risk of disease transmission from WBNP bison to the Mackenzie and Nahanni bison herds,

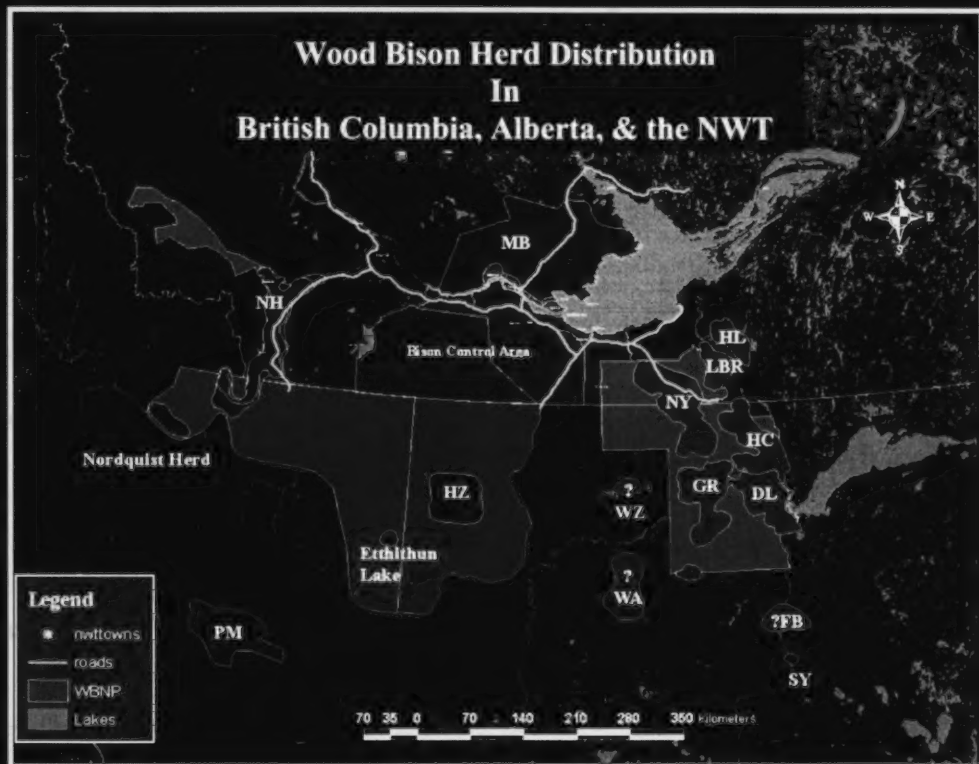


Figure 1: Distribution of bison herds in Northern Canada.

Note: Bison herds considered to be infected with bovine tuberculosis and brucellosis are shown in light green; HL = Hook Lake, LBR = Little Buffalo River, NY = Nyarling, HC=Hay Camp, GR=Garden River, DL=Peace-Athabasca Delta, FB=Fire Bag, WZ=Wentzel, WA=Wabasca, BM=Birch Mountain. Bison herds considered to be disease-free are shown in light beige grey; MB = Mackenzie, NH = Nahanni, PM= Pink Mountain, HZ = Hay Zama, SY = Synchrude/Fort McKay. The delineation of home ranges has originated from various research activities (Reynolds & Hawley 1987, Joly & Messier 2001, Harper et.al 2000, Wood Buffalo National Park, Resources, Wildlife and Economic Development, British Columbia Ministry of Environment, and Alberta Environment.)

The Bison Control Area Program

In 1987, the government of the Northwest Territories (GNWT) implemented a program to reduce the risk of contact between infected and disease-free bison (Gates and Gray 1992; Gates *et al* 1992b). The program entailed defining an area - The Bison Control Area (BCA) – from which bison are excluded through surveillance and active management. The BCA originally included lands south of the Mackenzie River and North of the Mackenzie Highway between Mills Lake (near Fort Providence) and Hay River. In 1990, the BCA was expanded to encompass the area between the Alberta-NWT border and southern shoreline of the Mackenzie River; the western boundary was delineated by Trout River; the eastern boundary was outlined by the Buffalo River and western boundary of WBNP (Figure 2). Presently, the BCA encompasses 3 936 339 ha.

Since 1993, the Government of the Northwest Territories (Department of Environment and Natural Resources) and the Government of Canada (Parks Canada) have jointly funded the Bison Control Area Program (BCAP). Cost of surveying the BCA is jointly funded under a Memorandum of Understanding between the two agencies. This report summarizes the results of the Bison Control Area Program for the 2007/2008-surveillance season, (i.e. December 2007 - April 2008).



Figure 2: The Northwest Territories Bison Control Area showing all three surveillance zones.

Goals and Objectives

The goal of the Bison Control Area Program in the Northwest Territories is to reduce the risk of infection of the Mackenzie and Nahanni herds with tuberculosis and brucellosis. Our overall approach to achieve this goal is to conduct systematic aerial surveys with an extensive public communication program.



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The objectives of the Bison Control Area Program are to:

- Detect and remove any bison in the BCA, and to prevent establishment of bison herds or individuals in this area¹;
- Continue surveillance of the bison control area; and
- Increase public awareness of the Bison Control Program.



Slide 1: View of the Mackenzie River looking northwest towards Fort Providence and representing the area covered during the shoreline patrols.

¹ Wood bison (*Bison bison athabasca*) are considered a threatened subspecies of North American Bison by the committee on the Status of Endangered wildlife in Canada (COSEWIC); they are listed on Appendix II by the Convention on the International Trade In Endangered species (CITES). Because of the disease risk, any bison found in the BCA are considered nuisance wildlife under section 61 of the NWT Wildlife Regulations Act (Government of the Northwest Territories 1992). This regulation states that NWT residents may shoot any bison sighted in the BCA.

METHOD

The same route and data collection techniques were used as in previous years, to ensure consistency and comparability of search effort and resulting wildlife observations. (Gates and Gray 1992, Gates *et al.* 1992, Williamson *et al.* 1995, Antoniak and Gates 1996, Bohnet and Gates 1997, Boulanger *et al.* 1998 & 2001, Tanguay, *et al.* in prep, Potvin *et al.* in prep, Jewell *et al.* in prep, Campbell *et al.* 2003.)

The Bison Control Area is stratified into three discrete zones (Figure 2). Active surveillance through aerial observation is conducted during winter months when bison and bison sign are most identifiable (i.e., tracks and/or feeding craters) and visibility is optimal. Survey effort and frequency of monitoring is allocated according to the presumed likelihood of bison moving into the area (see AFRAN 1999) and existing weather conditions. Consequently, this survey design requires frequent (weekly) patrols of the shoreline areas that are closest to the range of Mackenzie Bison Herd and the range of bison in WBNP. Less frequent surveys (semi-comprehensive and annual comprehensive) are used to survey larger areas (BCA Zones I and II) in the BCA. These surveys also include the collection of information on other species, including boreal caribou, moose, wolves & wolf activity and small mammals. This data is then stored in related data banks. This year the information collected will also be fed into the Wildlife Information System (WMIS).

Three different types of aerial surveys were completed to systematically survey the BCA throughout the surveillance season. The first type of survey was a weekly shoreline patrol of the high-risk area (Zone I). The patrol route flown in the 2006/2007 season was continued this season (Hartop *et al*). This survey was conducted at approximately seven-day intervals and had a planned flight time of about two and one half hours per patrol flight.



Figure 3: Standardized shoreline patrol route for the Bison Control Area that was flown in 2007 – 2008 season.

The second type of survey was a one-time semi-comprehensive surveillance flight of Zone I; this survey was conducted in February 2007. This survey covers a larger area

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and requires about 15 hours to complete. This season the transects were slightly more concentrated around the McNally Creek area than usual, as there had been delayed, third party reports from truckers over the summer of possible bison sightings. The final survey type was the annual comprehensive surveillance flight of Zones I and II. For this annual comprehensive survey performed in late March, we allocated approximately 35 hours of flight time. We did not conduct aerial surveys in Zone III of the BCA.

All patrols and surveys were flown using a Cessna 337. A local community observer and pilot from Landa Aviation in Hay River conducted all shoreline patrols. There was no requirement to conduct verification flights. The survey crew for the surveillance flights of Zone I and the annual comprehensive survey of Zones I and II consisted of a pilot, the BCA Technician and two community observers. The technician sat in the front seat while the observers occupied the left and right rear seats of the aircraft. Survey aircraft were flown at approximately 150 to 200 meters' above ground level \pm 21 meters' with a standard deviation of 94 meters' at 90% level of confidence and at a speed of approximately 170 km/hr.

The flight paths from previous surveys, to plan our routing for aerial surveys in the 2007 – 2008 surveillance season, were used. However, routes used in previous years, for both the semi-comprehensive and comprehensive surveys were updated and restructured this season in order to put emphasis on areas of probable importance as identified by local observers and past BCA reports. Survey lines were extended into the northwest corner of WBNP, similar to last year, in addition to concentrating more coverage in higher risk areas (Figures 4.0 and 5.0). Utilising predetermined flight routes ensures maximum coverage for both surveillance surveys, and allows the BCA

Technician to pre-plan fuel stops and breaks, which increases survey efficacy and improves safety. Pre-planned routes were used as a guide, and were followed for the bulk of the survey only deviating from them to investigate animal tracks or other abnormal activities such as wolf kills; in this way we could be sure of consistency and some accuracy in area covered. This allowed us to survey Zones I & II with the greatest possible coverage given available flying hours.

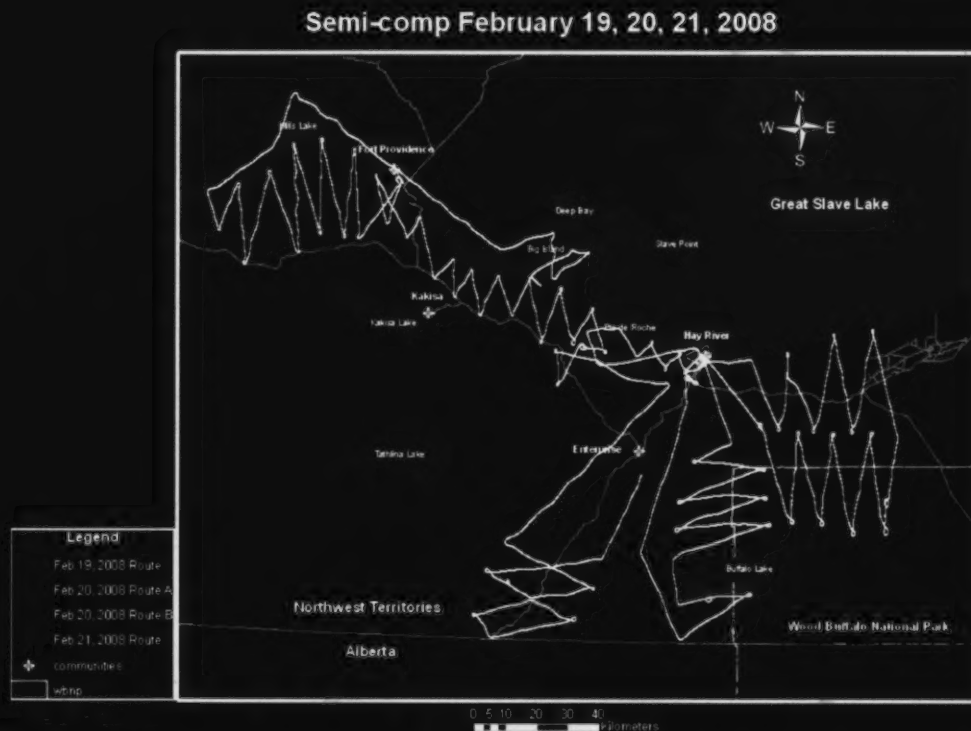


Figure 4: Actual routes flown for the Semi-Comprehensive Survey February 19th to 21st, 2007, from Hay River & Fort Providence, NWT.

To improve sampling quality and precision during surveillance surveys, a known strip (transect) width of 500 meters' was used and sticks cross hatched with electrical tape were mounted on the aircraft struts to define the boundaries of the strip within

which the observers count animals. With the aid of the observers, the BCA technician affixed the markers prior to flights using a known calculation [$w = (W/H) \cdot h$]. Once this exercise was complete, a test flight was carried out to ensure marker placement accuracy; the test flight entailed positioning the aircraft alongside a known 500-metre length on the ground, at survey altitude, and confirming whether the fixed tape positions aligned with the known ground length. Implementing a known strip (transect) width enables us to accurately calculate percent cover.

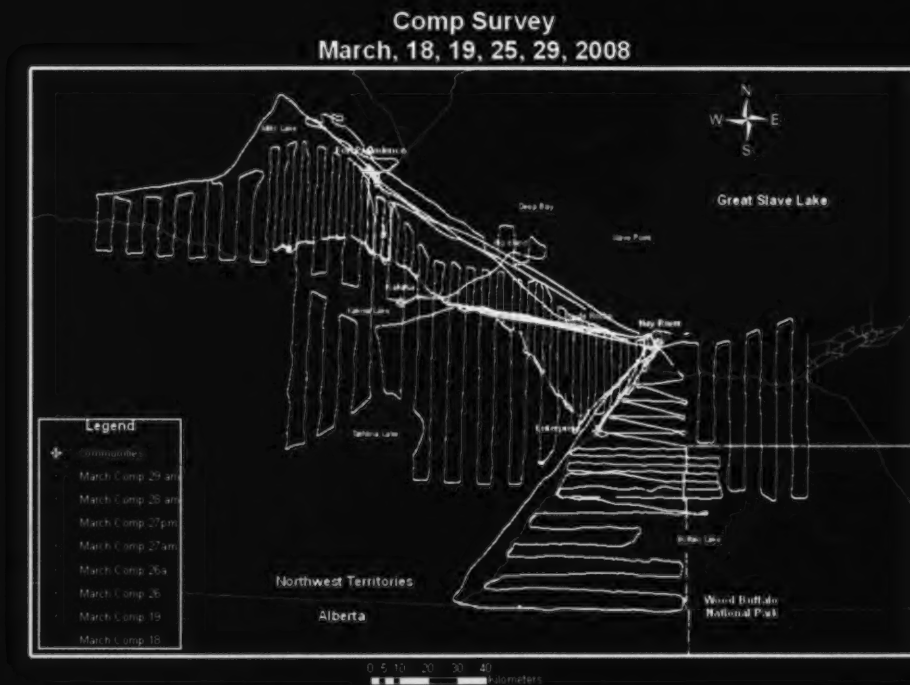


Figure 5: Routes Flown for the March Comprehensive survey completed March 19th to 24th, 2007.

Wildlife observations during weekly shoreline patrols were most often plotted on a NTS 1:250,000-reproduction map of the survey area and recorded on a survey data

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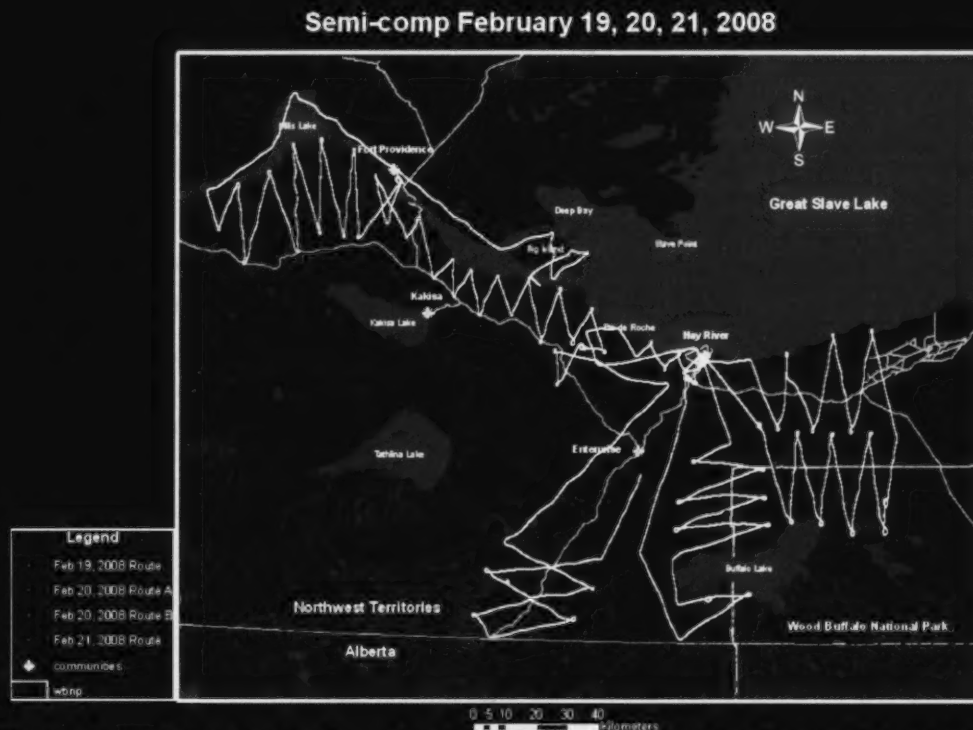


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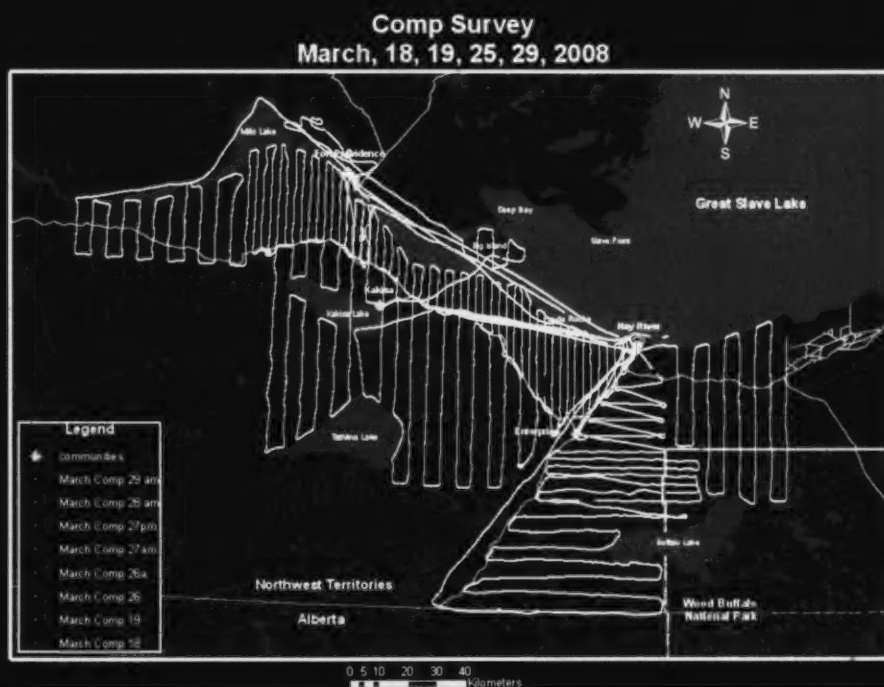
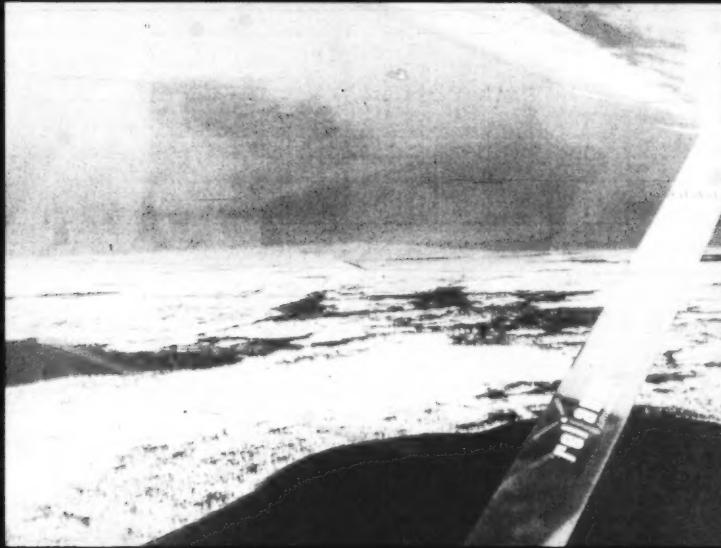


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Wildlife observations during weekly shoreline patrols were most often plotted on a NTS 1:250,000-reproduction map of the survey area and recorded on a survey data

sheet. The above information as well as the survey weather & details were faxed to the BCA Technician from Fort Providence. This was input into an Excel spreadsheet and then transferred into a Database IV file format for export into ArcGis 9.0 Geographic Information System (Environmental Systems Research Institute, 1999-2004). An Ozi Explorer Mapping program (Des Newman, version: 3.95.4) was used to plot the route grid for the survey routes, this was uploaded into a hand-held Garmin GPS, GPS map 76S and was used by the pilot for navigation and to maintain adherence to the planned routes. Also the survey routes plotted in OziExplorer were verified and checked and then entered into ArcPad ® 7.0.1, Environmental Systems Research Institute Inc (ESRI). During the surveys the same GPS used by the pilot was interfaced with the ArcPad system through a Panasonic, Tough book, Model #CF-18 PC, Centrino Mobile Technology, to provide the location of observations. This system was on loan from Parks Canada, our partner, on a trial basis. All observations of large mammals (*i.e.*, moose, caribou, and wolves) were recorded using ArcPad ® ESRI Field Software for Windows XP, during the semi-comprehensive and annual comprehensive flights. These data were prepared for copy to ArcGIS 9.0, (ESRI) with ArcPad ® 7.0.1. The Pathfinder Office Software Aspen Global Positioning system Field Software (Trimble Survey and Mapping Products, 1998) was carried as a backup system only.



Slide 2: Photo of typical BCA topography near Buffalo Lake looking towards the Cameron Hills.

RESULTS

During the 2007/2008 Surveillance season all attempts were made to fly the aerial surveys and patrols when weather and light conditions were most favorable for visually observing animal tracks and activities. However, some flights were conducted in less suitable conditions in order to maintain adequate and regular surveillance.

(Appendix A)

Shoreline Patrols

Weekly shoreline patrols were initiated on December 20, 2007 and continued until April 28, 2008. (Figures 6.1 - 6.13 Maps) The BCA Technician completed the first patrol as previously arranged observers became unavailable and to assess the actual location of the patrol route. The same shoreline patrol route used in the 2006/2007,

was followed. Due to poor weather conditions, patrols were cancelled and did not resume until January 21, 2008. Two shoreline patrols were initiated directly from Hay River; Patrol Number 1 to search the McNally Creek area while en-route to Fort Providence to look for possible bison sign, that had been reported by a trucker in the summer of 2007 and Patrol 9 due to the unavailability of an observer in Fort Providence, resulting in having an observer from Hay River do the flight. Patrol number 12 was not completely flown (Figure 6.12) due to an unforeseen local weather condition resulting in freezing rain over Mills Lake area. With the exception of Patrol number 1, Bison were seen in the Slave Point area and a small herd varying between 11 and 15 animals was seen close to the Mackenzie crossing throughout the entire project period.

Total flight time for the 13 -shoreline patrols flown was 39.8 hours² (Table.1) with a mean duration of 3.06 hours (± 0.3 Standard Deviation with a 90% level of confidence). A Cessna 337 was used to complete all Shore Line Patrols. On 28 April 2008 the last scheduled shoreline patrol flight was flown. Flights were continued up to that date because of the lengthy cold spring, which kept snow conditions intact. After that date daytime temperatures rapidly increased to the mid teens swiftly deteriorating snow and ice conditions. It was determined that ice conditions in these areas would likely continue to degrade very quickly and deter bison from crossing the Mackenzie River.

Table 1. Summary of shoreline patrols in the Bison Control Area from December 2007 to April 2008³ completed with a Cessna 337.

Date	Ferry Hrs	Survey Hrs	Date	Ferry Hrs	Survey Hrs
20-Dec-2007	0.5	2.8	04-Mar-2008	1.0	2.2
5-Jan-2008	1.0	2.3	07-Mar-2008	1.0	2.4
29-Jan-2008	1.0	2.1	14-Mar-2008	0.0	2.5
02-Feb-2008	1.0	2.1	24-Mar-2008	1.0	2.4
13-Feb-2008	1.0	2.2	3-April-2008	1.0	2.1
28-Feb-2008	0.9	2.3	9-April-2008	1.7	1.0
			28-April-2008	1.0	1.3

Total survey hours: **27.7 Hrs.** Total ferry hours: **12.1 Hrs.** Total Shoreline: **39.8 Hrs.**



Figure 6.1: Map of patrol Number 1, completed December 20, 2007.

³ Total flight time for shoreline patrols includes ferry time.

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29-Jan-2008	1.0	2.1	14-Mar-2008	0.0	2.5
02-Feb-2008	1.0	2.1	24-Mar-2008	1.0	2.4
13-Feb-2008	1.0	2.2	3-April-2008	1.0	2.1
28-Feb-2008	0.9	2.3	9-April-2008	1.7	1.0
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Figure 6.1: Map of patrol Number 1, completed December 20, 2007.

² Total flight time for shoreline patrols includes ferry time.

Shoreline Patrol Number Two
January 15, 2008



Figure 6.2: Map of patrol number 2, completed January 15th, 2008.

Shoreline Patrol Number Three
January 29, 2008



Figure 6.3: Map of Patrol number 3, completed January 29th 2008.

Shoreline Patrol Number Four
February 2, 2008

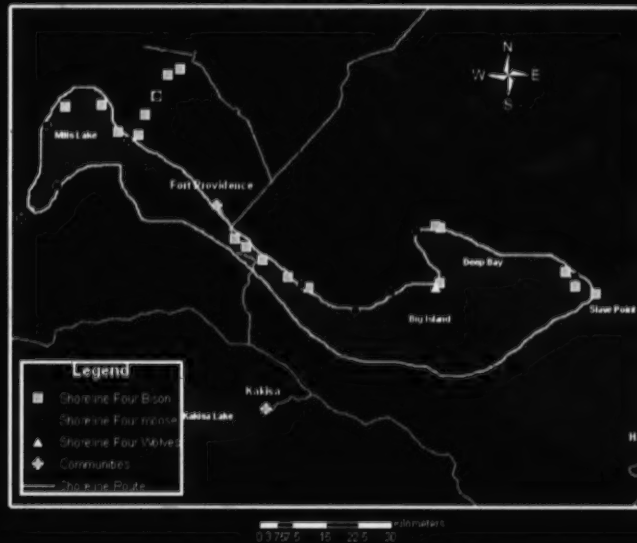


Figure 6.4: Map of Patrol number 4 completed February 2nd 2008.

Shoreline Patrol Number Five
February 13, 2008

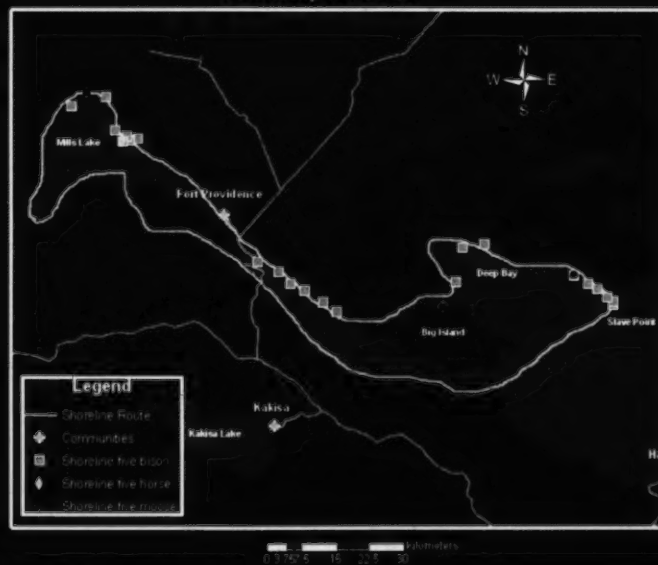


Figure 6.5: Map of Patrol number 5, completed February 13th 2008.

Shoreline Patrol Number Two
January 15, 2008



Figure 6.2: Map of patrol number 2, completed January 15th, 2008.

Shoreline Patrol Number Three
January 29, 2008



Figure 6.3: Map of Patrol number 3, completed January 29th 2008.

Shoreline Patrol Number Four
February 2, 2008



Figure 6.4: Map of Patrol number 4 completed February 2nd 2008.

Shoreline Patrol Number Five
February 13, 2008

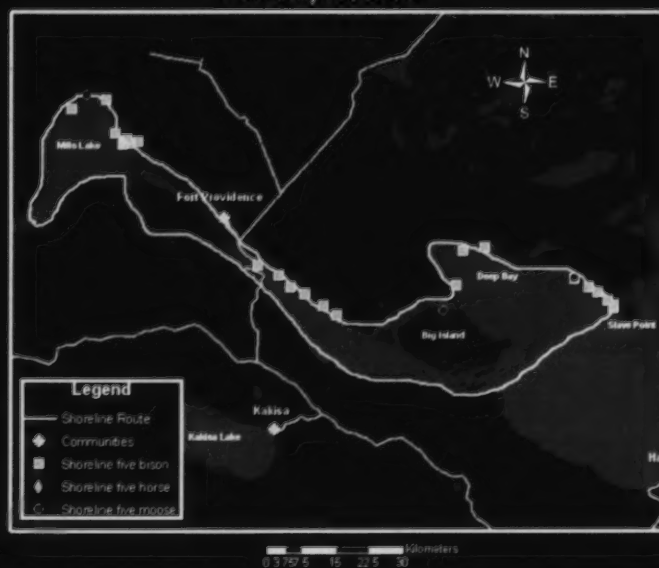


Figure 6.5: Map of Patrol number 5, completed February 13th 2008.

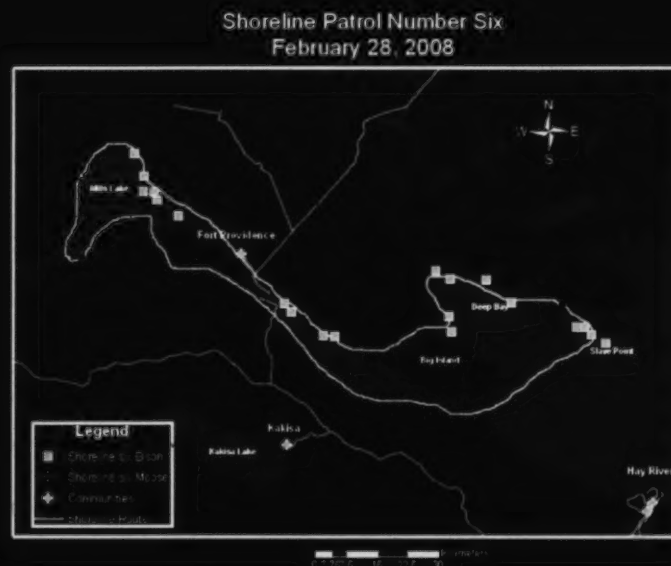


Figure 6.6: Map of Patrol number 6, completed February 28th, 2008.

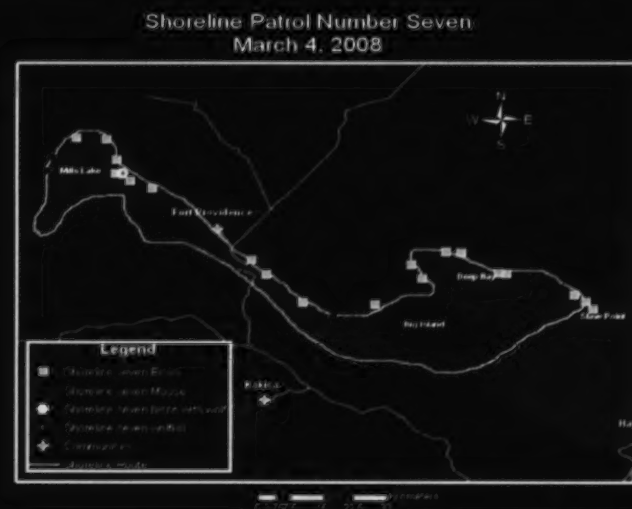


Figure 6.7: Map of Patrol number 7, completed March 4th, 2008.

Shoreline Patrol Number Eight
March 7, 2008



Figure 6.8: Map of Patrol number 8, completed March 7th 2008.

Shoreline Patrol Number Nine
March 14, 2008



Figure 6.9: Map of Patrol number 9, completed March 14th 2008.

Shoreline Patrol Number Six
February 28, 2008

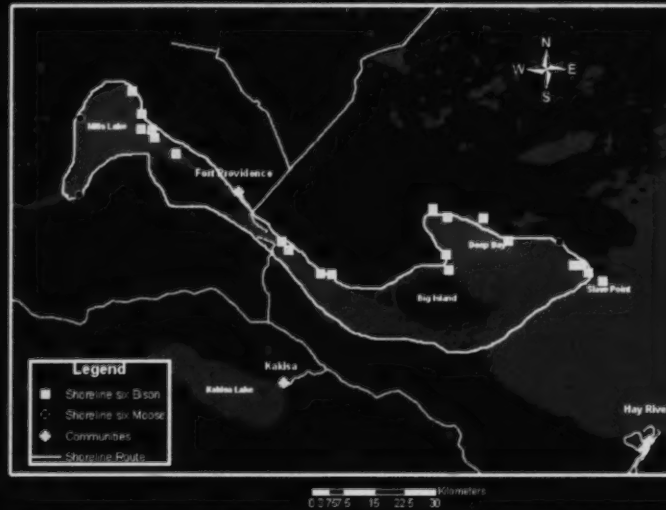


Figure 6.6: Map of Patrol number 6, completed February 28th, 2008.

Shoreline Patrol Number Seven
March 4, 2008



Figure 6.7: Map of Patrol number 7, completed March 4th, 2008.

Shoreline Patrol Number Eight
March 7, 2008



Figure 6.8: Map of Patrol number 8, completed March 7th 2008.

Shoreline Patrol Number Nine
March 14, 2008



Figure 6.9: Map of Patrol number 9, completed March 14th 2008.

Shoreline Patrol Number Ten
March 25, 2008



Figure 6.10 Map of Patrol number 10 completed March 24th 2008.

Shoreline Patrol Number Eleven
April 03, 2008



Figure 6.11 Map Patrol number 11, completed April 3rd, 2008.

Shoreline Patrol Number Twelve
April 09, 2008



Figure 6.12 Map of Patrol number 12, completed April 9th, 2008.

Shoreline Patrol Number 13
April 28, 2008.



Figure 6.13: Map of Shoreline patrol number 13, completed April 28th, 2008.

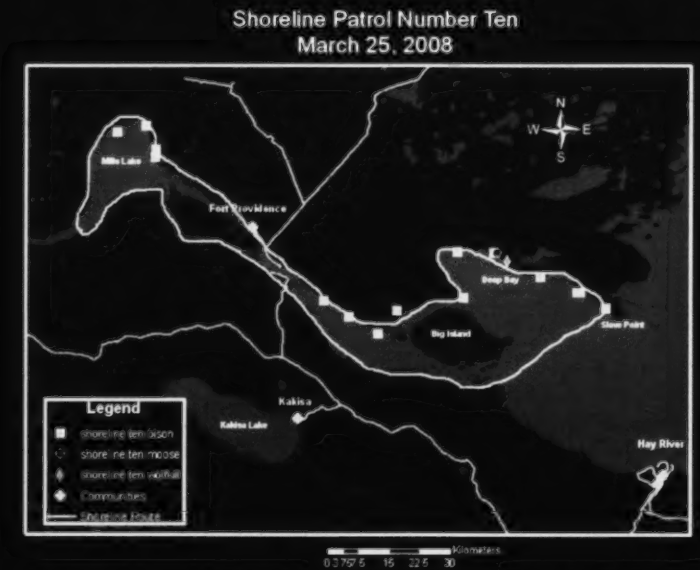


Figure 6.10 Map of Patrol number 10 completed March 24th 2008.



Figure 6.11 Map Patrol number 11, completed April 3rd, 2008.

Shoreline Patrol Number Twelve
April 09, 2008

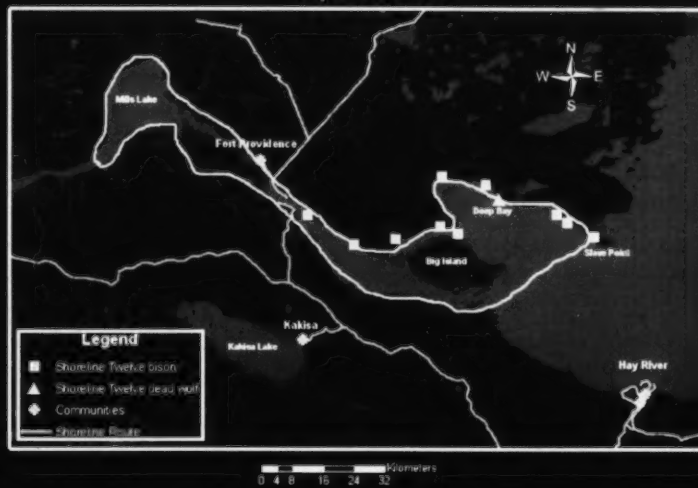


Figure 6.12 Map of Patrol number 12, completed April 9th, 2008.

Shoreline Patrol Number 13
April 28, 2008.



Figure 6.13: Map of Shoreline patrol number 13, completed April 28th, 2008.

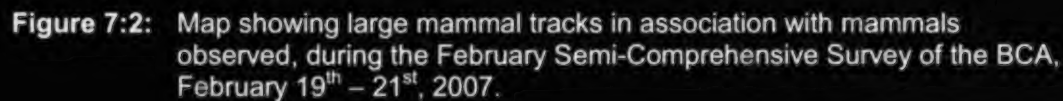
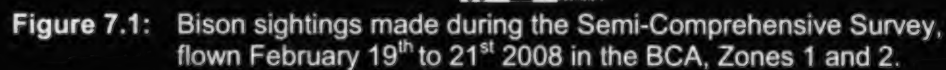
Surveillance Surveys

We conducted one semi-comprehensive surveillance flight of BCA Zone I and partial Zone II this season. This survey was conducted from February 19th – 21st, 2007 (see Figures 4.0, 7.1, 7.2, 7.3, 7.4 and 7.5). The total time flown on the semi-comprehensive survey was 15.4 hours, with an estimated 9.6 % coverage of Zones 1 and 2. The comprehensive surveillance flight of BCA Zones I and II was conducted from March 18th – 29th 2007 (Figures 5.0, 8.1, 8.2, 8.3, 8.4 and 8.5), and required 35.9 hours to complete with 25.2 % coverage of the area. (Table 2). For both surveys a Cessna 337 was used.

A slightly more intense transect was used in the area just west of Hay River during the semi-comprehensive survey as compared to last year, largely due to the investigation of questionable tracks in the McNally Creek area. (Figure 4)

Table 2. Summary of Surveillance flights in the Bison Control Area from February to March 2008. A Cessna-337 was used to complete both surveillance surveys.

Date	BCA Zone	Hours Flown
19 - 21 Feb.2008	I (Semi-Comprehensive)	15.4
21-31 Mar.2005	I&II (Comprehensive)	32.9
Total Hours:		48.3



Semi-comp February 19, 20, 21, 2008



Figure 7.1: Bison sightings made during the Semi-Comprehensive Survey, flown February 19th to 21st 2008 in the BCA, Zones 1 and 2.

Semi-comp February 19, 20, 21, 2008



Figure 7.2: Map showing large mammal tracks in association with mammals observed, during the February Semi-Comprehensive Survey of the BCA, February 19th – 21st, 2007.



Figure 7.3: Wolf and associated sightings shown in relation to wolf kills, observed, during the February Semi Comprehensive Survey of the BCA during February 19th – 21st 2008.



Figure 7.4: Caribou and associated tracks located during the February Semi-Comprehensive Survey of the BCA during February 19th – 21st, 2008.



Figure 7.5 Map showing Large Mammal and significant Small Mammal track sightings made during the February Semi-Comprehensive Survey, February 13th to 16th 2007.

Wildlife Observations

No reports of bison were received during the 2007 –2008 surveillance season, nor were bison observed in the BCA. Also, no attempts were observed by bison (*i.e.* fresh tracks) to cross the Mackenzie River. All bison observed during shoreline patrols or surveillance flights were located on the north side of the Mackenzie River in the Mackenzie Bison Sanctuary (MBS). The cumulative totals of large mammals observed during shoreline patrols and surveillance flights were 2552 bison, 151 caribou, 163 moose, and 84 wolves (Table 3).

Bison were most often observed along the north shore of Mills Lake, in large groups initially and on the North Shore of the Mackenzie River and in scattered smaller groups between Slave Point and the mouth of the Horn River. (Figures 6.1- 6.13, Figure

Semi-comp February 19, 20, 21, 2008

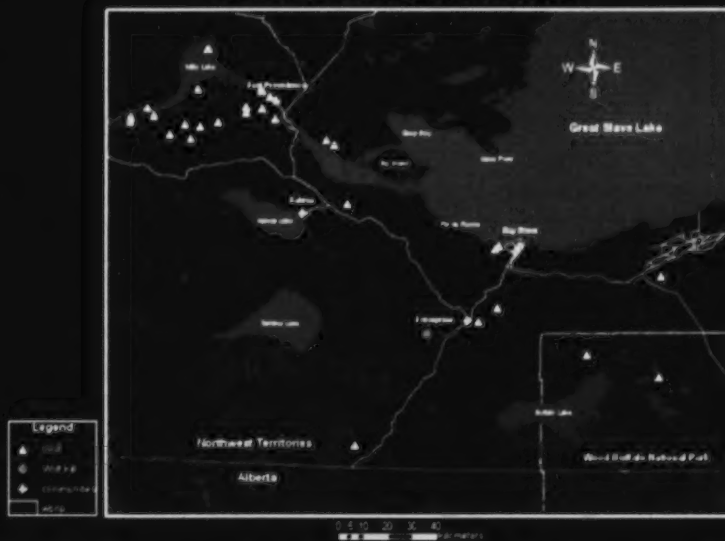


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Semi-comp February 19, 20, 21, 2008



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7.1 and Figure 8.1). There were two small groups of Bison and originally this season, more groups, that stayed in the vicinity of the Mackenzie Ice Crossing and Fort Providence. During shoreline patrols moose were observed along the north and south shores of the Mackenzie River around Mills Lake, and near Big Island. On surveillance surveys moose were observed along the south shore of the Mackenzie River, south of Mills Lake, around Buffalo Lake, The east end of Tathlina Lake and by the NWT/ Alberta border. (Figures 6.1- 6.13, 7.2, and 8.2) The largest concentration of moose was located around Tathlina Lake. No caribou were observed during shoreline patrols. During surveillance surveys most caribou were seen north of Buffalo Lake, West of Tathlina Lake and the base of the Cameron Hills.

Wolves and wolf activity were observed during shoreline patrols early in this season in the vicinity of Mills Lake and later on the north shore of the Mackenzie River near Slave Point (Figures 6.1, 6.2, 6.6, 6.7, 6.9 and 6.10). Wolves were also seen to be very active around the north side of Deep Bay (Figure 6.12) and a dead wolf was seen during the March 9th patrol. No wolves were seen during the Semi Comprehensive Survey, although strong evidence existed of their presence (Figure 7.3) During the Comprehensive Survey the same situation for wolves existed, but wolf kills were observed in the Enterprise area and also around Buffalo Lake. (Figure 7.3 & 8.3) No identification of these kills was made.

Based on the concentrations of large mammal tracks, most of the activity during February appeared to be south of Mills Lake and around Buffalo Lake and the Cameron Hills. There was also a greater concentration of large mammal tracks east of Hay River between Buffalo Lake and Great Slave Lake. In March, concentrations of large animals

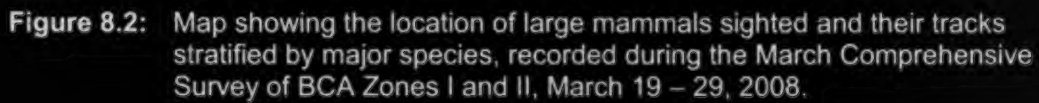
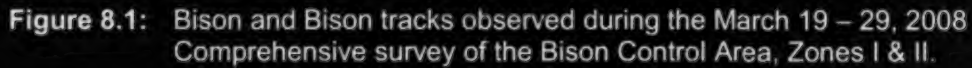
appeared to be widely scattered with the weakest concentration of animals east of the Cameron Hills near the Mackenzie Highway, south and west of Buffalo Lake to the Mackenzie Highway and north between the Mackenzie Highway and Axe Point (Figure 7.2 and 8.2).

Certain concentrations of small mammal activity in association with large mammals were recorded as well. There appear to be no significant relationships between these two groups and it was not the point of this survey to gather information relating to small mammals.

Table 3. Recorded sightings of large mammals observed during all surveillance flights in the Bison Control Area from December 2007 to April 2008.

Species	Surveillance Flights			Totals
	Shoreline Patrols (n=12)	Semi-Comprehensive (n=1)	Comprehensive (n=1)	
Bison *	1695	808	49	2552
Caribou	0	101	50	151
Moose	61	72	30	163
Wolf	18	52	14	84

* Note: All Bison reported were found outside the Bison Control Area during Shore Line patrols or surveys on the north shore of the Mackenzie River. Also, due to the frequency of patrol & surveillance activities over the same area it should be clear that animal numbers will be biased in the above table.



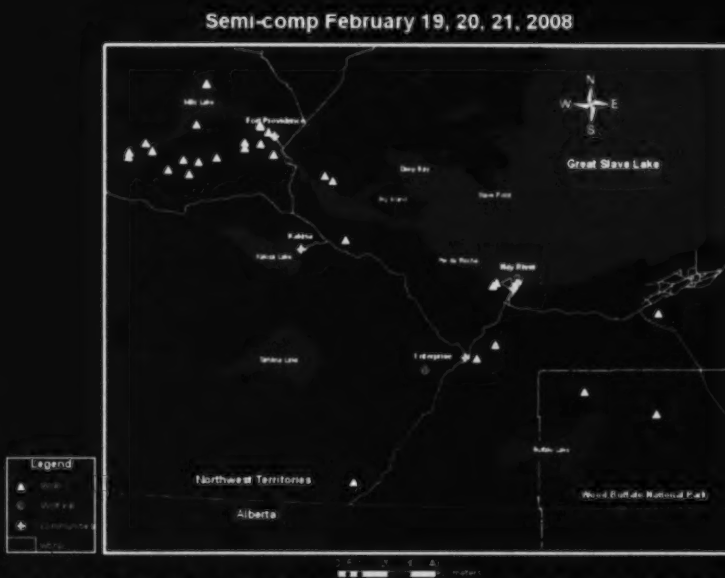


Figure 8.3: Wolf & associated tracks and activities sighted during the March Comprehensive survey of the BCA, zones I and II, March 19 – 29, 2008.



Figure 8.4: Caribou and caribou tracks observed during the March Comprehensive Survey, completed March 19 through 29, 2008.

Semi-comp February 19, 20, 21, 2008

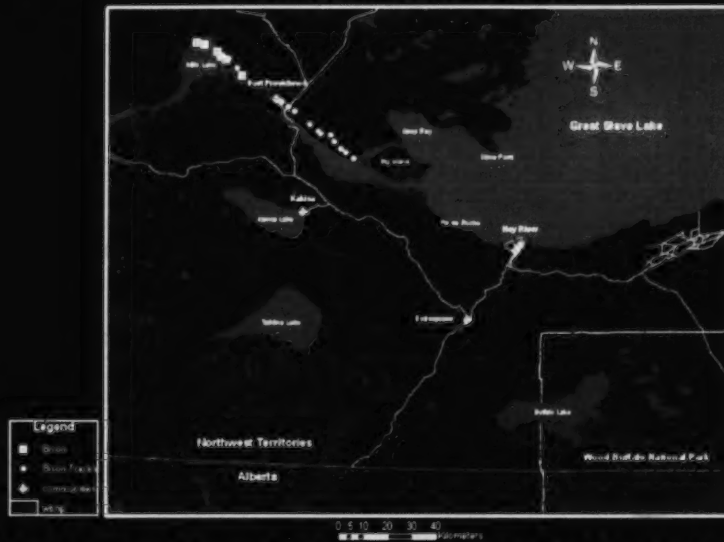


Figure 8.1: Bison and Bison tracks observed during the March 19 – 29, 2008 Comprehensive survey of the Bison Control Area, Zones I & II.

Semi-comp February 19, 20, 21, 2008



Figure 8.2: Map showing the location of large mammals sighted and their tracks stratified by major species, recorded during the March Comprehensive Survey of BCA Zones I and II, March 19 – 29, 2008.

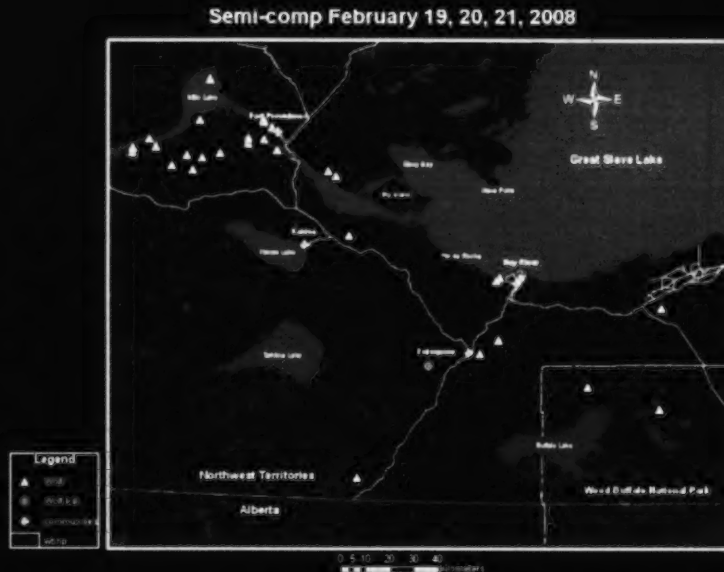


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Figure 8.4: Caribou and caribou tracks observed during the March Comprehensive Survey, completed March 19 through 29, 2008.



Figure 8.5: Map showing small mammal tracks and other associated activities, observed during the March Comprehensive Survey of the BCA, completed March 19 to 29, 2008.

Communications

As much emphasis as possible was placed on public consultation and presentation to interest groups that exist in and around the BCA over the 2007/2008 season (Appendix G). This included a combination of public meetings, posters, radio broadcasts on CKLB & CBC, magazine displays and an update of the BCA Website. A copy of the entire work plan is included in Appendix G, which includes the Media Plan. All communities and interest groups were contacted with a letter accompanied by several posters at the beginning of the season to explain the program and the role of the BCA technician and to foster an interest in future meetings.

Manuscript reports from the two previous seasons were reviewed and forwarded to EN & R, Wildlife Information for publishing. Literature from previous years programs



Figure 8.5: Map showing small mammal tracks and other associated activities, observed during the March Comprehensive Survey of the BCA, completed March 19 to 29, 2008.

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was reviewed and a spreadsheet was created to analyze past community contacts (Appendix I), this spread sheet will be updated on an annual basis. Again, as in previous years, communities that had not been visited recently or at all were identified. Emphasis on holding public meetings was placed on those communities identified during the literature search and arrangements were made well in advance with group contacts to meet. Also, several communities where turnout had been poor the previous year were added to the list. An ongoing literature review was undertaken specific to *B Abortus* and *B Tuberculosis* affecting bison and the mitigating measures available to reduce disease and disease risk.

The BCA Technician began contacting all band and community offices during November and December. A record of communication with all groups is included in Appendix F. The BCA Technician met with the Village of Enterprise (December 10, 2007), held a public presentation in Fort Resolution, December 18th, 2007, met briefly with the Métis Government Council December 19, 2007 and met briefly with the Environmental Officer of the K'athlodeeche First Nation (December 21, 2007). In the New Year information sessions were held in Fort Providence (January 9, 2008) and Hay River at the Centennial Library (January 29, 2008). A member of Parks Canada was present at the Enterprise meeting and the BCA collaborated with Parks Canada to jointly present an information session at the Hay River Centennial Library February 29, 2008.

The bison program was explained using a power point presentation (Appendix E) and discussion was promoted as well as comments from the groups were collected. (Appendix H) Attendance at public presentations was generally poorer than previous

years, although the sessions were advertised well in advance by poster and on the local radio station. The number of attendees ranged from 4 at both meetings in Hay River to over 14 at Enterprise. An Invitation was also extended to the Hay River Town Council for the public presentations in that Community.

As last year the high schools were visited for a day where a presentation was given to some of the senior grades and comments were solicited from the students (Appendix H). Diamond Jenness High School in Hay River was visited and two grade 10 classes received a presentation (February 29) and PWK High School in Fort Smith was also visited (April 23), (Appendix E, 2 and Appendix H). Attempts were also made to visit Chief Alex Sunrise Education Centre on the Hay River Reserve, however other circumstances have prevented that from happening.

The BCA Technician also met with members of the WBNP Staff the end of November, to outline the planned work schedule and to solicit any advice concerning methodology and bison activity in the areas adjacent to the BCA. An opportunity was provided for Wood Buffalo National Park staff to accompany the BCA Technician to any public meetings. The manager of Resource Conservation offered the use of Parks Canada's Panasonic Tough Book and ArcPad® system for this year's data collection program. Both opportunities were gratefully accepted. Suggestions were also made for a future re design of the Bison Control Program.

The poster "IF YOU SEE A BISON" was distributed to the West Point First Nation, Hay River, K'atlodzeeche First Nation, Hay River, Ka'a'gee Tu First Nation, Kakisa, Sambea' K'e Dene Band, Trout Lake, Enterprise Settlement Council, The Deh Gah Got'ie Dene Council, Fort Providence, the Fort Providence Metis Local No. 57, the

Fort Providence Management Board, Tthedzeh K'edeli First Nation, Jean Marie River, the Hay River Metis Government Council, the Deninoo Community Council Fort Resolution, the Fort Resolution Deninu K'ue First Nation, the Fort Simpson Liidlil Kue First Nation and Fort Simpson Metis Local Number 52. Also the pamphlets "IF you See A Bison....", the posters "Protecting Healthy Bison" and "The BCA Zones", were distributed to all the above groups and at all public presentations.

A half page colour advertisement was included in the 2008 Explorers Guide, Page 67. (Appendix D). This advertisement was designed with the intent of reaching a wider audience; its aim was again to inform the public about the Bison Control Program, its goals and to solicit public participation. It also was designed to reflect the present changes to the Department of Environment & Natural Resources and to facilitate easy access for public information. A review of the advertisement and what it has achieved has indicated that we would reach a more local audience realizing more effective results at less cost. Plans next year are to no longer advertise in the Explorer Guide, but continue to place advertisements in several local papers.

This year an advertisement has been placed in the Hay River Hub to be run periodically over the summer months and the fall period. (Appendix D) An advertisement has also been placed in the NWT Summary of Hunting Regulations for the 2008 addition. Other newspapers such as the Decho Drum and News North are being considered, however, they have not been used to place advertisements as of the writing of this paper, mainly due to lack of funding.

A 30 second radio broadcast has been developed for broadcast at strategic periods over the winter and aired on CKLB and CBC. This broadcast is scheduled to be

aired during the off-season, when the project is not active. Plans are to run announcements over the summer and fall at a set time of one per week on CKLB as this is the most often listened to radio station by local people. (Appendix C)

The BCA Website has been updated for this year and published as a sub web to the 'Wood Bison in The NWT site. <http://www.nwtwildlife.com/bca>.

An answering machine has been purchased to receive calls during when the BCA program is not active. As well a toll free number was installed and linked to the answering machine. The telephone number is (866) 629-6438. This number is posted on the BCA advertisements, the website and posters. The answering machine will be left on over the summer months.

This year, as part of an IT & T plan to establish information signs in the South Slave along the highway corridors and at specific road 'turnouts', an attempt has been made to improve the BCA road signs that now exist. The boundary signs at the little Buffalo River, The NWT/Alberta Border and at Trout River have been redesigned to be more aesthetically pleasing and to provide more accurate information. Signs have also been designed to provide information for the traveling public and plans are to erect them at the NWT/Alberta Border, the Little Buffalo River turnoff, the Trout Lake Rest area and campground and the Fort Providence ferry landing. These signs are planned to be complimentary to the IT & T signage package and they were submitted for design approval mid March 2008. As of the writing of this paper we are still waiting for funding approval and it is expected if that is given these signs will be constructed and installed over the next year.

DISCUSSION

In the 2007 – 2008 surveillance season no bison or bison sign were observed (i.e., tracks and/or feeding craters) in the BCA, either during weekly shoreline patrols, the semi-comprehensive and comprehensive surveillance surveys. However, as mentioned in this report, a group of Bison resided close to the Mackenzie Ice crossing throughout most of the surveillance season (figures 6.1 – 6.13), therefore, the occurrence of bison crossing the river can be quite possible. Thus, absence of bison in the BCA should not be presumed, especially as there is a long period in the off-season when the program is not active and there is no snow to make tracks visible. It is important that these surveys remain ongoing to ensure that the BCA is maintained free of bison and potentially preventing contact between healthy and unhealthy bison and the possible spread of disease.

This year the BCA Technician was able to begin the project mid November and as a result was able to provide direction for the collection of data. Prior to commencement of patrols and surveillance surveys, the BCA technician was able to solicit and hire experienced observers. In all surveys we have strong confidence in the quality of data collected by these observers.

Survey coverage was again extended during the semi-comprehensive and comprehensive surveys further into the northwest corner of WBNP in the area north of Buffalo Lake and west of *ca.* longitude 114° 30' W. Survey effort for surveillance surveys in subsequent years should continue to reflect the existing updated flight routes, as there are bison in the northwest park area and there is suitable bison habitat in the

vicinity of the Hay River near the NWT/Alberta border. This makes bison dispersal from the park and the Hay-Zama herd a distinct possibility.

This season sampling quality and precision was maintained by utilizing a known strip (transect) width (500 metres) during surveillance surveys. Implementing a strip (transect) width enabled us to more or less accurately calculate percent cover prior to surveys. Considering the difficulty of maintaining the exact height above ground while flying, the greatest possible coverage was maintained, given the available flying hours. This technique should continue, as it will enhance forthcoming surveillance surveys with heightened precision and increased methodical strength.

A large amount of time was spent on public consultation and communication this season, in an attempt to inform the public, thereby encouraging the report of any possible bison sightings. This is an important part of the bison program and it has increased over the years (Appendix H).

- Information sessions with community members in Zone III of the BCA should be continued, because there is currently no surveillance in this area. As we rely solely on reported public sightings to monitor this region, it is essential that we meet with community residents in order to obtain feedback.
- A visit was made to two schools (Appendix G) and this should be continued further as the message will go home to the parents and therefore out into the community. Questions and comments from students were again this season, highly intelligent and innovative and moderate effort in this regard should continue.

- Letters were written to all groups followed by telephone calls to those targeted for meetings explaining the program and requesting an opportunity to meet. This worked well to contact the affected groups.
- Publishing information about the Bison Control Program in some newspapers of the Northwest Territories during summer months is being done this year, but intermittently due to present funding. This should be done in future on a regular basis and will continue to provide information exposure to both residents and tourists.
- The advertisement in the Explorers Guide will be dropped for this coming season in favour of more frequent and less expensive advertisements in News North and the Hay River Hub. The intent is to reach a more appropriate and sympathetic audience.
- Radio broadcasts should continue throughout the entire year at strategic times. It must not be overlooked that CBC will make public announcements once prompted on a weekly basis by e-mail or telephone, free of charge.
- Efforts should continue to complete a suitable advertisement for television in cooperation with EN & R, Policy Legislation & Communications.
- Other media methods should be explored, such as printed coasters, fridge magnets or coffee cups with the BCA contact number.

All relevant BCA information pamphlets currently on display and in circulation should be inventoried and, if necessary, updated. It is recommended that applicable Band offices and tourist centres in the NWT be contacted to inquire whether supplies

need replenishing. Any low stock should be re-ordered and replaced. To reach transport operators, posters will be posted at the weigh scales outside of Enterprise, NWT.

The Bison Control Area website is activated and maintained annually. The BCA Technician, when present updates this site through 'Front Page'. It should be updated whenever changes in program information or figures occur. It is imperative that website information be current and accurate, because it will be an effective medium for informing the public on a year round basis.

All forms of Media used should post the toll free number as well as all District and Regional office numbers in and around the BCA. There should be no uncertainty of the public's ability to reach the custodians of the BCA.

Development of a database that stores location coordinates of probable areas of interest to bison (i.e. meadows, high density corridors, etc...), near standard surveillance routes should be considered next season. These locations may be selected in a number of ways by:

- Conducting habitat analysis using satellite imagery based on vegetation types and proximity to diseased herds;
- Use of Global Information Systems mapping technology to classify and store information;
- Locating areas based on results from studies such as Gates and Wierzchowski's landscape evaluation of bison movements and distribution (2003); and
- Using compiled survey data to extrapolate potential areas of interest.

- Creation of a Prospective Bison Habitat database would be beneficial to the BCA program in terms of aiding in future survey planning and increasing our knowledge of potential bison habitat around BCA.

ACKNOWLEDGEMENTS

ENR South Slave Region, Fort Smith, NT and WBNP, Parks Canada Agency, Fort Smith, NT funded the BCA program for the 2007 - 2008 surveillance years.

A number of people played an important role by providing assistance in conducting the Bison Control Area Program during this surveillance season. Melissa Johns from shared services in Fort Smith handled administrative aspects such as travel, staffing, finance and pay records. Valued assistance came from Resource Officer Evelyn Krutko of Fort Providence in arranging for observers, assisting with logistics and sharing concerns as well as providing advice for the on-going success of the Bison Control Program.

Thanks to the community participants, as well as the Deh Goh Got'ie Dene Council and the Hay River Metis Government Council, who assisted in the surveillance flights; they are Robert Sambelle, of Fort Providence; and from Hay River, Henry Collins and Lyle Froelich. Thanks also goes to aircraft pilots; Darcy and Taylor King from Landa Aviation Ltd. for their input and expertise during surveillance and shoreline patrol flights and for providing other help when needed beyond the requirements of the job.

The assistance of Kim King and Jean Hinton in arranging for BCA presentations at Diamond Jenness Secondary School is thankfully acknowledged. Gratitude also goes out to E & NR's Wildlife Management Support Services, Data Coordinator, Doug Hartt, who assisted with re-loading the BCA website for updating and Chris Cadieux, Internet/intranet Specialist, for assistance in publishing the completed website.

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Of course, we thank our Parks Canada partners not only for their shared financial contribution but also for their advice and technical assistance. Stewart McMillian and Rhona Kindropp willingly provided the Panasonic Laptop and ArcPad® program for use during the surveys as well as contacts and assistance at public presentations. Rita Antoniak freely gave advice for the collection and downloading of data from the programs as well as how to display it and Dawn Andrews gave her time to the programming and use of the Data Dictionary for ArcPad®. Rhea Coleman, Karina Repa and Birch Howard included the BCA to be part of the Parks Canada presentation in Hay River.

LITERATURE CITED

- Animal, Plant and Food Health Risk Assessment Network, Canadian Food Inspection Agency. 1999. Risk Assessment on Bovine Brucellosis and Tuberculosis in Wood Buffalo National Park and Area. 42 p.
- Antoniak, R., and C.C. Gates. 1995. Surveillance of the Bison Control Area, December 1994-March 1995. Department of Resources, Wildlife and Economic Development, Government of the Northwest Territories, Manuscript No. 84. 67p.
- Antoniak, R., and C.C. Gates. 1996. Surveillance of the Bison Control Area, December 1995-April 1996. Department of Resources, Wildlife and Economic Development, Government of the Northwest Territories, Manuscript No. 99. 33p.
- Bidwell, W., J.S. Nishi., and T.R. Ellsworth. 2004. Bison Control Area Program Annual Report of Survey Activities, December 2003-April 2004, Department of Resources, Wildlife and Economic Development, Government of the Northwest Territories. 50 p.
- Bidwell, W., J.S. Nishi., and T.R. Ellsworth. 2005. *in prep* **Bison Control Area Program Annual Report of Survey Activities, December 2004-April 2005**, Department of Resources, Wildlife and Economic Development, Government of the Northwest Territories. 50 p.
- Bohnet, S and C.C. Gates. 1997. Bison Control Program: Annual Report of Survey Activities, December 1996 – April 1997. Department of Resources, Wildlife and Economic Development, Government of the Northwest Territories, Manuscript Report No.100. 33p.
- Boulanger, A.J.M., T. Ellsworth and J. Nishi, 1999. Bison Control Program: Annual Report of Survey Activities, December 1997-April 1998. Department of Resources, Wildlife and Economic Development, Government of the Northwest Territories, Manuscript Report No. 101. 37p.
- Connelly, R.G. *et al.* 1990. Northern diseased bison: report of the Environmental Assessment Panel. Minister of Supply and Services Canada, Ottawa, Ontario.
- Environmental Research Systems Institute, Inc., ArcView GIS 3.2a Software, Copyright 1992-2000.
- Fuller, W. A. 2002. Canada and the "Buffalo", Bison bison: A tale of two herds.

Canadian Field Naturalist 116(1): 141-159.

- Gates, C.C., T. Chowns, and H. Reynolds. 1992a. Wood Buffalo at the crossroads. Pages 137-165 in Foster, J., D. Harrison, I.S. McLaren and B. Champion, eds. Buffalo. University of Alberta Press, Edmonton, Alberta.
- Gates, C.C., B. Elkin., L. Keary., and T. Chowns 1992b. Surveillance of the Bison Free Management area, NWT Department of Renewable Resources Manuscript Report No 65. 26 p.
- Gates, C.C. and S. Gray. 1992. Surveillance of the Bison Free Management area, NWT. NWT Department of Renewable Resources Manuscript Report No. 50. 29 p.
- Gates, C.C. and J. Wierzchowski. 2003. A Landscape Evaluation of Bison dated Movements and Distribution in Northern Canada. Addendum to the final report December 2001. 18 p.
- Gates, C.C., J. Mitchell, J. Wierzchowski and L. Giles. 2001a. A landscape evaluation of bison movements and distribution in Northern Canada. Axys Environmental Consulting Ltd., Calgary, Alberta. 113 pp.
www.axys.net/library.htm
- Gates, C.C., R.O. Stephenson, H.W. Reynolds, C.G. van Yyll de Jong, H. Schwantje, M. Hoefs, J. Nishi, N. Cool, J. Chrisholm, A. James, and B. Koonz. 2001b. National Recovery Plan for the wood bison (*Bison bison athabasca*). National Recovery Plan No. 21. Recovery of Nationally Endangered Wildlife (RENEW), Ottawa, Ontario.
- Government of the Northwest Territories. Department of Renewable Resources: NWT Wildlife Act. Section 61 (August 10, 1992), Yellowknife. [online] URL: <http://www.gov.nt.ca/RWED/plc/legislation.htm>
- Jewell, T., J.S. Nishi., and T.R. Ellsworth. *In prep* Bison Control Area Program Report of Seasonal Activities, December 2001-April 2002, Department of Resources, Wildlife and Economic Development, Government of the Northwest Territories. 34 p.
- Joly, D.O., and F. Messier. 2001. Limiting effects of bovine brucellosis and tuberculosis on wood bison within Wood Buffalo National Park. University of Saskatchewan, Final Report, March 2001, submitted to Wood Buffalo National Park, Heritage Canada, Fort Smith, NT. 118 p.
- Joly, D.O. and F. Messier. 2004. Factors affecting apparent prevalence of tuberculosis and brucellosis in wood bison. *Journal of Animal Ecology*. 73: 623-631.

Newman, D., Oziexplorer Version: 3.90.2, GPS Mapping Software. [online] URL: <http://www.oziexplorer.com>.

Nishi, J.S, 2002. Surveillance Activities Under the Northwest Territories Bison Control Area Program (1987-2000), Department of Resources, Wildlife and Economic Development, Government of the Northwest Territories, Manuscript Report No. 145. 32 p.

Potvin, D., J.S. Nishi., and Ellsworth. T.R. *in prep* Bison Control Area Program Report of Seasonal Activities, December 2000-April 2001, Department of Resources, Wildlife and Economic Development, Government of the Northwest Territories. 29 p.

Research Advisory Committee. 2001. Final Report to the Canadian Minister of Heritage and the Constituents of the Research Advisory Committee, Bison Research and Containment Program. Wood Buffalo National Park Unpublished Report, Fort Smith, NT. 29 p.

Tanguay, M., J.S. Nishi, and Ellsworth. T.R. *in prep* Bison Control Area Program Report of Seasonal Activities, December 1999-April 2001, Department of Resources, Wildlife and Economic Development, Government of the Northwest Territories. 29 p.

Tessaro, S.V., C.C. Gates, and L.B. Forbes. 1993. The brucellosis and Canada. Tuberculosis status of wood bison in the Mackenzie Bison Sanctuary, NWT Canadian Journal of Veterinary Research. 57: 231-235.

Williamson, K., C.C. Gates, and A. Allisiak. 1995. Surveillance of the Bison Control Area, January-April 1994. Department of Renewable Resources, Government of the Northwest Territories. Manuscript Report No. 82. 49 p.

APPENDIX A

Summary of weather conditions during shoreline patrols and surveillance flights throughout the Bison Control Area Program surveillance season 2006-2007

Summary of weather data during shoreline patrols – BCA 2006/2007 surveillance season.

Date	Patrol #	Zone	Temp	Winds	Sky	Light	Intensity	Snow Cover
20-Dec-07	1	1	-24	NW-10	Broken	Flat	Medium	Complete
15-Jan-08	2	1	-24	Calm	Clear	Bright	High	Complete
29-Jan-08	3	1	-39	Calm	Clear	Bright	High	Complete
02-Feb-08	4	1	-28	NW-5	Clear	Bright	Medium	Complete
13-Feb-08	5	1	-29	E - 7	Clear	Bright	High	Complete
28-Feb-08	6	1	-17	S - ?	Clear	Bright	High	Complete
04-Mar-08	7	1	-27	Calm	Scattered	Bright	High	Complete
07-Mar-08	8	1	-7	SE - 5	Clear	Bright	High	Complete
14-Mar-08	9	1	-22	NW - 10	Scattered	Bright	Medium	Complete
25-Mar-08	10	1	-10	SE - 5	Clear	Bright	High	Complete
03-Apr-08	11	1	-14	E - ?	Clear	Bright	High	Complete
09-Apr-08	12	1	+2	NW - 6	Overcast	Flat	Medium	Complete
28-Ppr-08	13	1	+10	SE - 10	Broken	Flat	Medium	Low Veg. Shg.

Summary of weather data during surveillance surveys – BCA 2006/07 surveillance season.

Date	Survey	Zone	Temp	Winds	Sky	Light	Intensity	Snow Cover
19-Feb-08	Semi Am	1&2	-12	Calm	Broken	Flat	Medium	Complete
20-Feb-08	Semi AM	1&2	-14	SE-05	Clear	Bright	High	Complete
20-Feb-08	Semi PM	1&2	0	S - 05	Clear	Bright	High	Complete
21-Feb-08	Semi Pm	1&2	-12	S - 05	Clear	Bright	High	Complete
18-Mar-08	Comp	1&2	-26	W -10	Broken	Bright	Medium	Complete
19-Mar-08	Comp	1&2	-22	Calm	Overcast	Bright	Medium	Complete
26-Mar-08	Comp Am	1&2	-18	Calm	Clear	Bright	High	Complete
26-Mar-08	Comp PM	1&2	-7	NW - 5	Clear	Bright	High	Complete
27-Mar-08	Comp Am	1&2	-13	Calm	Clear	Bright	High	Complete
27-Mar-08	Comp Pm	1&2	-8	W-10	Clear	Bright	High	Complete
28-Mar-08	Comp	1&2	-18	W - 5	Clear	Bright	High	Complete
29-Mar-08	Comp	1&2	8	Calm	Clear	Bright	High	Complete

APPENDIX B

Summary of surveillance activities and removals of bison from the Northwest Territories Bison Control Area Program (1988/89-2007/08).

Aerial surveillance						
Year	Shoreline Patrols	Semi-Comprehensive Surveys	Comprehensive Surveys	Total Hours	Snow-mobile Ground Patrols	Bison Removals
1988 / 89	1					
1989 / 90	2					
1990 / 91	2					
1991 / 92		7				
1992 / 93			3			9 ^a
1993 / 94	14 ^b		1		23	
1994 / 95	10 (26) ^c	6 (94)	1 (34)	153	33	2 ^d
1995 / 96	11 (35)	3 (48)	1 (41)	123		3 ^e
1996 / 97	21 (62)	3 (45)	1 (46)	153		
1997 / 98	14 (43)	3 (46)	1 (48)	137		
1998 / 99	14 (43)	2 (30)	1 (45)	117		
1999 / 00	14 (42)	2 (28)	1 (46)	115		
2000 / 01	13 (40)	2 (30)	1 (50)	120		
2001 / 02	14 (42)	2 (29)	1 (42)	113		
2002 / 03	11 (25)	2 (22)	1 (40)	87		
2003 / 04	13 (31)	1 (11)	1 (37)	78		
2004 / 05	12 (29)	1 (14)	1 (33)	76		
2005 / 06	11 (23)	1 (14)	1 (36)	88		
2006 / 07	12 (38.4)	1 (18.5)	1 (35.9)	92.8		
2007/08	13 (39.8)	1 (15.4)	1 (32.9)	88.1		

^a 17 May 1992: 7 bulls shot near Point de Roche

31 May 1992: 1 bull shot near Point de Roche (no lymph nodes collected)

Serological testing for *Brucella* was negative for all 9 bulls, no lesions consistent with Tuberculosis observed on gross pathology or histopathology.

^b Four patrols covered the Hay River area and extended inland to the northwest park boundary.

^c Numbers in brackets represent survey hours(rounded off to the nearest hour).

^d 8 March 1995, 1 cow shot by hunter along south shore of Mackenzie River. Cow had likely been wounded by wolves. Blood serum and retropharyngeal lymph nodes collected.

13 October 1994, prior to the surveillance season beginning, 1 bison shot by hunter near the Eastern boundary of the BCA. Blood and tissue samples collected but no evidence of brucellosis or Tuberculosis.

^e 19 March 1996: 3 cows killed by hunter on the south shore of Mackenzie River. Blood serum (n=2) and retropharyngeal lymph nodes (n=3) collected. No serological reactors to *Brucella*, and Lymphatic tissue normal on gross examination.

APPENDIX C

A 30 second public service announcement to be aired on; CBC Radio North when and as space is available weekly, and CJCD one day spot per day; May 12 & 18, August 29 – September 1, September 8 – 12, September 15 – 19, September 22 – 26, October 6 – October 10 and October 25 – 26, 2008.

Script:

Public Service Announcement for Radio

Bison in the Buffer Zone

Bison populations in Wood Buffalo National Park and the adjacent Slave River Lowlands are infected with tuberculosis and brucellosis.

A buffer zone lies south of the Mackenzie River to the Alberta border and between Trout River and Buffalo River, to prevent contact with diseased Bison.

All bison in this area are presumed to be disease carriers and must be removed for testing.

If you see bison in the buffer zone, please contact the nearest Environment and Natural Resource Office.

For more information check out our website at: www.nwtwildlife.com.

APPENDIX D

The half page colour article published in the 2007 Explorer's Guide magazine;

IF YOU SEE A BISON IN THE CONTROL AREA...

Bison populations in the Slave River Lowlands and the Wood Buffalo National Park area are infected with bovine tuberculosis and brucellosis. In 1983, the Bison Control Area (BCA) was created to prevent the spread of these diseases to the heavily Mackenzie and Athabasca herds. The BCA program is jointly funded by the Parks Canada Agency and the Government of the Northwest Territories.



All bison in the BCA are presumed to be diseased and must be removed and tested.

In the Northwest Territories, two herds have been re-established and are disease-free. The Mackenzie herd numbers approximately 180 animals and represents the largest herd of healthy wood bison in Canada and a cornerstone in the territory's wood bison recovery program. The Athabasca herd also numbers about 180 animals.

Please report any bison sightings to the BCA as soon as possible to the nearest Environment and Natural Resources (ENR) office.

Under Northwest Territories Wildlife regulations, a resident may at anytime, hunt bison within the BCA. A hunter who kills a bison in the BCA is required to report the incident as soon as possible.

If you would like more information regarding the Bison Control Program, please contact the ENR office.

PHONE: Hay River (867) 875-0800 • Fort Providence (867) 888-3002
Fort Liard (867) 776-4311 • Fort Smith (867) 872-6400 • Fort Simpson (867) 885-2479



Black and white advertisements have been placed in the Hay River Hub and are also scheduled to be run the week of May 14 and September 17 to coincide with Spring and Fall Hunts. Below is a proposed version of future ¼ page advertisement.

Bison In the Buffer Zone



A buffer zone, preventing contact between diseased and healthy bison lies south of the Mackenzie River to the Alberta border and between Trout River and Buffalo River.

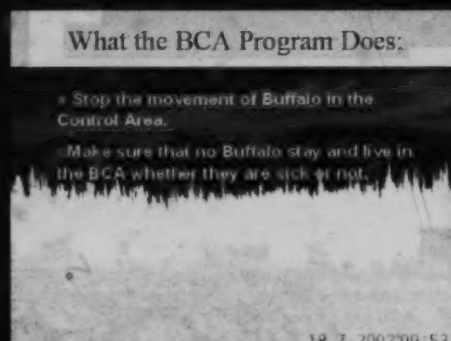
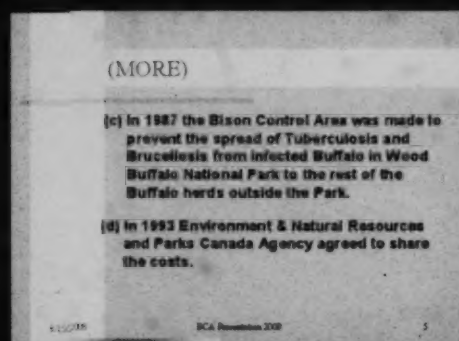
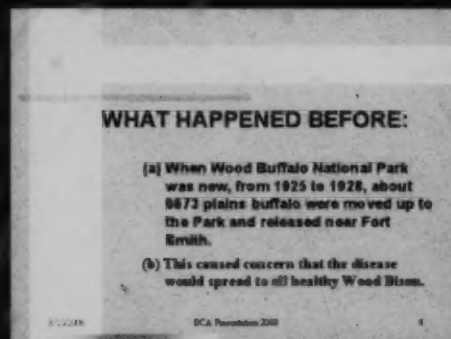
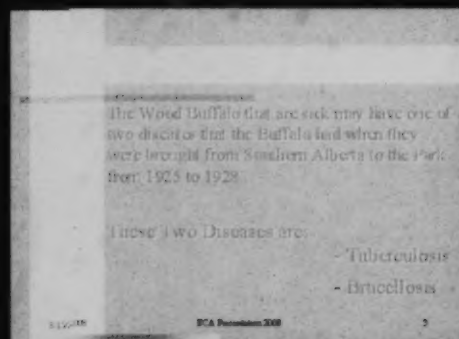
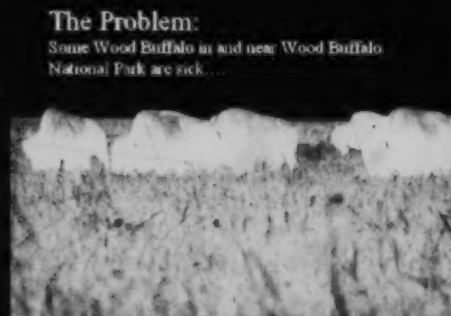
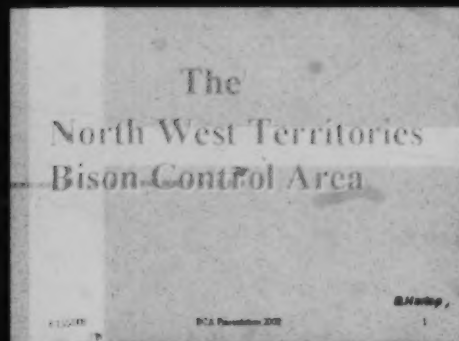
All bison in this area are presumed to be disease carriers and must be removed for testing. If you see bison in the buffer zone, please contact your nearest Environment and Natural Resource Officer or call

1-866-629-6438. For more information, visit www.nwtwildlife.com



Appendix E

E: Slideshow presentation utilized during BCA community meetings (read left to right)



APPENDIX D

The half page colour article published in the 2007 Explorer's Guide magazine;

IF YOU SEE A BISON IN THE CONTROL AREA...

Bison populations in the Slave River Localities and the Wood Buffalo National Park area are infected with bovine tuberculosis and brucellosis. In 1997, the Bison Control Area (BCA) was created to prevent the spread of these diseases to the healthy Mackenzie and Athabasca herds. The BCA program is jointly funded by the Parks Canada Agency and the Government of the Northwest Territories.

NORTHWEST TERRITORIES

Slave River Localities

Wood Buffalo National Park

Hay River

Fort Smith

Fort Simpson

British Columbia

Alberta

Wentzel Herd

Hay River

Fort Smith

Fort Simpson

Wentzel Herd

Hay River

Fort Smith

Fort Simpson

Wentzel Herd

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Hay River

Fort Smith

Fort Simpson

Wentzel Herd

All bison in the BCA are presumed to be diseased and must be removed and tested.

In the Northwest Territories, the bison have been re-introduced into the Slave River Localities. The Mackenzie herd numbers approximately 100 animals, and represent the largest herd of bison in the world. In the Slave River Localities, the bison are managed by the Northwest Territories Department of Environment and Natural Resources.

Please report any bison sightings in the BCA to your nearest Environment and Natural Resources Officer.

Within Northwest Territories (NWT) jurisdiction, a bison may be at risk if it is seen within the BCA. If you see a bison in the BCA, please report it to your nearest Environment and Natural Resources Officer.

PHONE: Hay River (867) 875-5550 • Fort Providence (867) 659-3002
Fort Lister (867) 778-4311 • Fort Smith (867) 872-6400 • Fort Simpson (867) 695-7470



Black and white advertisements have been placed in the Hay River Hub and are also scheduled to be run the week of May 14 and September 17 to coincide with Spring and Fall Hunts. Below is a proposed version of future 1/4 page advertisement.

Bison In the Buffer Zone



A buffer zone, preventing contact between diseased and healthy bison lies south of the Mackenzie River to the Alberta border and between Trout River and Buffalo River.

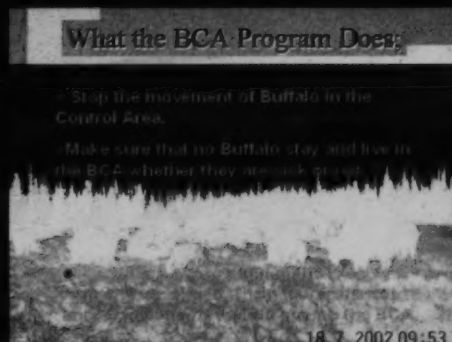
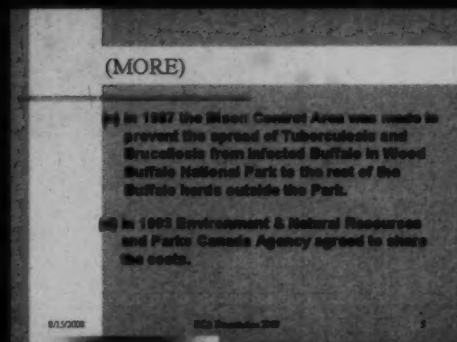
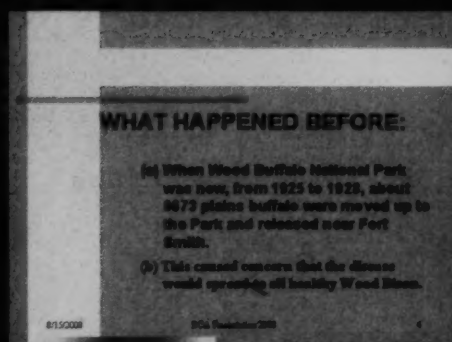
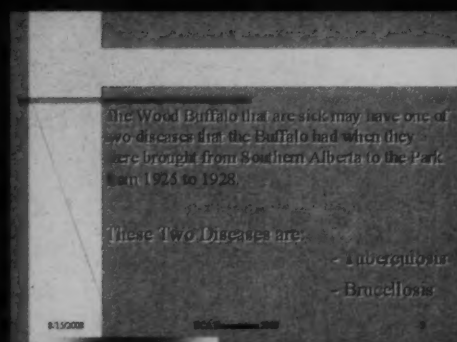
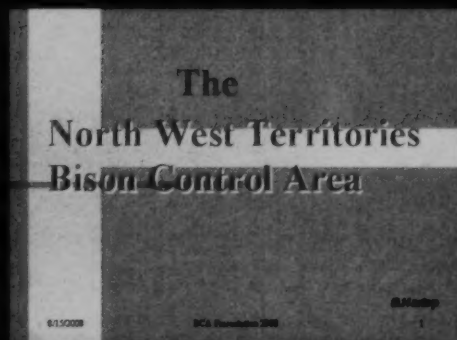
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1-866-629-6438 For more information, visit www.nwtwildlife.com



Appendix E

E: Slideshow presentation utilized during BCA community meetings (read left to right)





Area of Free Ranging Bison in this Part of Canada

6/13/2008

BCA Presentation 2008

What Are Tuberculosis & Brucellosis ?

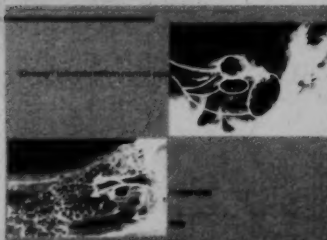
Tuberculosis

Caused by a bacterium

In animals you can see them
having a hard time breathing
You may see them coughing
You may see a runny nose or
mucus from the mouth
In Lungs, small rounded
lumps (tubercles)

6/13/2008

BCA Presentation 2008



6/13/2008

BCA Presentation 2008

Brucellosis

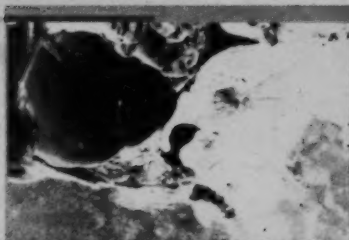
Also caused by a bacterium.

Swollen leg joints the animal
will limp.

Female will have a swollen belly.
Sores under the skin, in the meat
and in the heart, lungs and other
organs.

6/13/2008

BCA Presentation 2008



6/13/2008

BCA Presentation 2008

How to Protect Yourself From These Diseases

Handle the animal carefully and do not eat
into infected parts.

Wash your hands, clothes and clothes with
hot soapy water after handling the animal.

Do not spill fluid from infected parts onto
the meat.

Wash ME G...

For more information on Tuberculosis and Brucellosis, please
visit the following websites:

http://www.canadafish.com/CanDefish.htm

6/13/2008

BCA Presentation 2008

17

BCA STRATIFICATION

What is it?

- We divide the Bison Control Area into different zones to allow us to concentrate on the zone that has the most serious problems concerning any incidents.
- We have three zones in the Bison Control Area.

31.8.2001.13:46



Zone I:

Extends from Axe point on the S.W. shore of the Mackenzie River in the west to the Buffalo River in the east and to up to the Alberta Border.

This is the area where we have the most serious problems with poaching and illegal hunting.

Zone II:

- The lighter orange area on the map.

- This covers the more southern areas adjacent to the border.

This is an area where there is some poaching and illegal hunting. It is a less serious area than Zone I.

Zone III:

- This is an area where we have the least serious problems with poaching and illegal hunting. It extends from Trout Lake in the west to the edge of Tathina Lake in the east and to the west shore of the Hay River in the south. It is adjacent to the NWT border.
- No surveillance is completed in this zone.
- We rely on the public to report poaching.

How We do This:

- Surveillance of the BCA with intensive aerial Patrols from December to April each year.

And

- This is done three ways;



Area of Free Ranging Bison in the Part of Canada
By A. Thompson 2003

What Are Tuberculosis & Brucellosis?

Tuberculosis

- Caused by a bacterium
- In animals you can see them having a hard time breathing
- You may see them coughing.
- You may see a runny nose or mucus from the mouth
- In Lungs, small rounded lumps (tubercles)

11/2/03

BCA Presentation 2003

7



11/2/03

BCA Presentation 2003

8

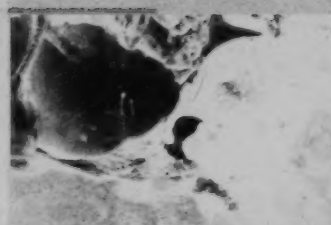
Brucellosis

- Also caused by a bacterium.
- Swollen leg joints the animal will limp.
- Female will have a swollen belly.
- Sores under the skin, in the meat and in the heart, lungs and other organs.

11/2/03

BCA Presentation 2003

10



11/2/03

BCA Presentation 2003

11

How to Protect Yourself From These Diseases

Butcher the animal carefully and do not cut into infected parts.

Wash your hands, knives and clothes with hot soapy water after handling the animal.

Do not spill fluid from infected parts onto the meat.

FOR MORE INFO...

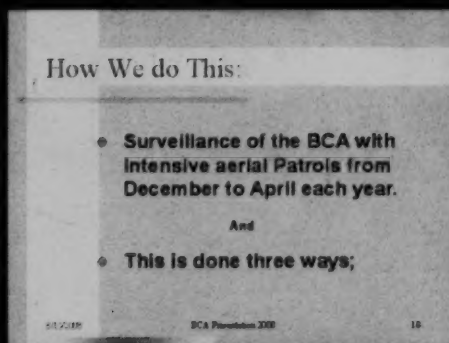
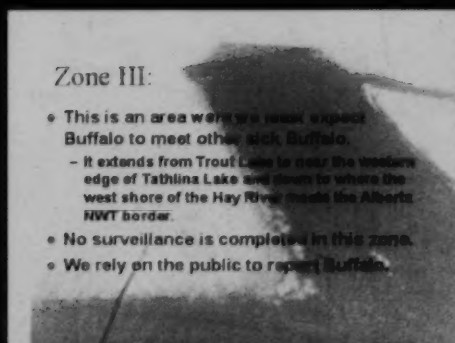
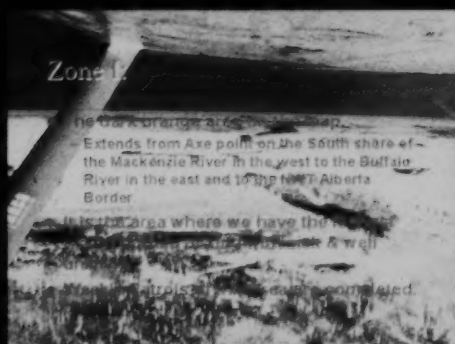
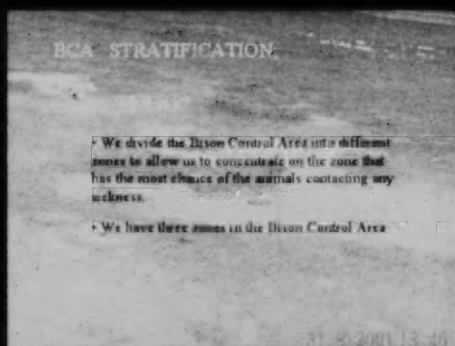
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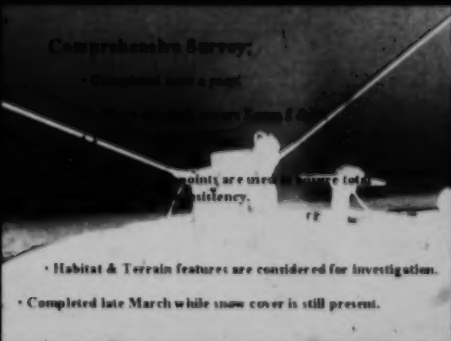
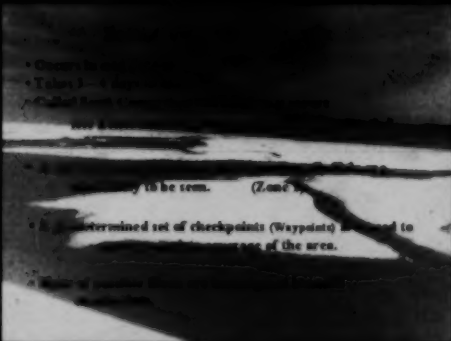
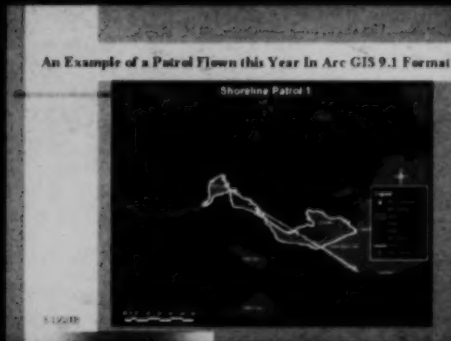
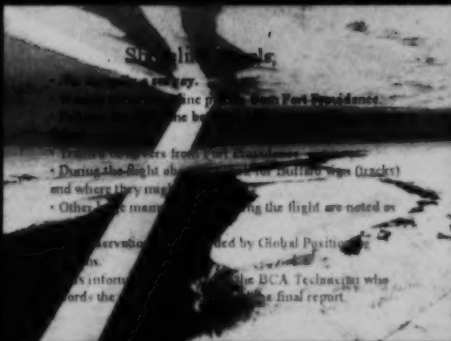
<http://www.gov.bc.ca/health/brucella.htm>

11/2/03

BCA Presentation 2003

12





Versation Patrols;

• There is a 24-hour patrol system and 24-hour response.

• There are no other law enforcement or other agencies.

- Aircraft.
- Truck
- Snowmobile

Public Awareness Program

• Meetings are held with hunters & support to encourage information.

• Information meetings are held with hunters.

• Radio & Television programs are made.

• Posters & Pamphlets are distributed.

• Road signs are posted.

11/1/2016

BCA Proceedings 2016

25

- Resident hunters may shoot bison in the control area at any time, but are required to report kills to nearest BIA office as soon as possible.

Notes

Taken into and released all are of bison origin.

The Wisconsin Bison herd is only 100 km away from WPA and because of a 10 km radius to move it is very difficult to control. Therefore active surveillance should continue until other options and solutions are brought forward in regards to the disease transmission probability.

In 1980-1981, 12 bison were shot near Fort de Meade, east of the river (neg. test).

In 1985 October 10, 1 bison was hunted by a Gila hunter near the Eastern boundary of the BIA (neg. test).

In 1985 March 7, 1 cow was tracked and shot by Fort Providence hunters.

In 1986 March 19, 1 cow shot by a Fort Providence hunter (neg. test).

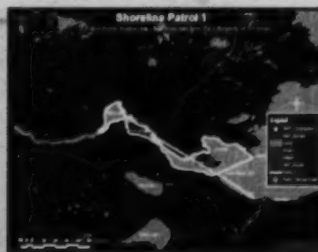


Shoreline Patrols

- Not actually a survey.
- Weekly aerial shoreline patrols from Fort Providence.
- Follows the shoreline between Miles Lake & Slave River.

- Trained observers from Fort Resolution.
- During the flight observers note any (land) and where they might be found.
- Other things noted during the flight are noted as well.
- Observations are reported by Global Positioning System (GPS).
- The information is passed to the BC & Tech Support who record the data and produce the final report.

An Example of a Patrol Flown this Year In Arc GIS 9.1 Format

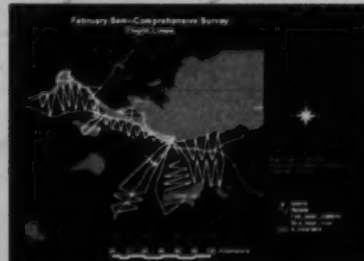


Semi-Comp Survey

- Occurs in mid February.
- Takes 3 - 4 days to do.
- Called Semi-Comp because it doesn't cover the Zone that later surveys cover but is detailed.

- A survey is conducted over the area where the Zone is most likely to be seen. (Zone 1)
- A predetermined set of checkpoints (waypoints) are used to ensure complete coverage of the area.
- Signs of possible flows are investigated between checkpoints.

GIS Map of the 2005 Semi-Comp Survey flown in 2005 displayed in Arc View 3.2



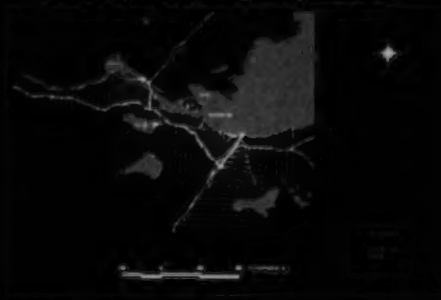
Comprehensive Survey

- Completed once a year.
- More detailed, covers Zone 1 & 2.

The survey route points are used to ensure total consistency.

- Habitat & Terrain features are considered for investigation.
- Completed late March while snow cover is still present.

March Comp Survey Showing Survey Route Grid



Verification Patrols;

- Done as a follow up on reported Buffalo sightings.
- How we get there is dependent on the situation.

Aircraft.
Truck
Snowmobile

Public Awareness Program

- Meetings are held with hunters & trappers to exchange information.
- Information events are held with the public.
- Radio & Television coverage are made.
- Power & Pampers are distributed.
- Road signs are posted.
- Web site

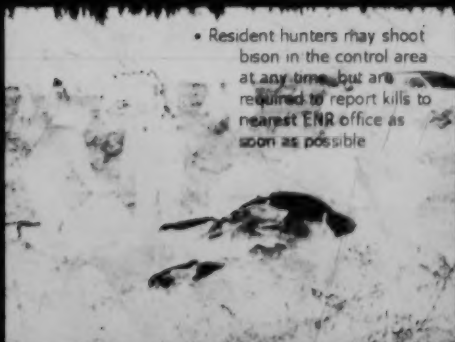


© 1997

Public Awareness 2000

20

- Resident hunters may shoot bison in the control area at any time but are required to report kills to nearest ENR office as soon as possible



Data

Observations and collection of bison tags

The bison herd is only 100 km away from WNP, and because of a bison's ability to roam, it is very likely that cubs could occur. Therefore active surveillance should continue until other actions and solutions are brought forward in regards to the disease transmission probability.

- in 1993-May 17th: 2 bison were shot near Ft. de Roche, east of H. River (ENR, 1993)
- in 1994-October 12: 1 animal was harvested by a C.H. hunter near the western boundary of the WCA (ENR, 1994)
- in 1995-March 8: 1 cow was tracked and shot by Fort Providence hunters
- in 1996-March 19: 1 cow killed by a Fort Providence hunter (ENR, 1996)

Thank you for your time and interest.

- Any Questions?
- Comments?



Appendix F:

2007/2008 Work and Communications Plan

Weekly Period	Work Plan	<i>Communications Plan</i>
November 20 to 24	<ul style="list-style-type: none"> - Review last years program and become familiar with changes & or needs, ongoing - Complete tender for the shoreline patrol A/C and ensure contract is awarded. C - Complete work planning for the budget, workload and comm. Plan. C - Complete paperwork for TSO with Gladys for self. C - Start tender process for Semi & Comp Surveys. C - Start literature review. C - Review Parks/GNWT MOU. C - Investigate the possibilities of obtaining a GNWT Credit Card. C - Outlook account established. C 	<ul style="list-style-type: none"> - Develop a communication record similar to last year and update. C - Initial contacts with communities with a view to visiting two at least before Christmas. C <p>Consider West Point FN and K'atlodeeche First Nation. Update Community/band telephone & address list. C</p>
November 27 to December 1	<ul style="list-style-type: none"> - Letter & Poster out to Loyd Chicot C - Contact River Front Convenience Store re accommodation. C - Contact WPFN about meeting December 6th or 13th. C - Contact K'atlodeeche, Keith Marshall. C - Complete tender request and forward to Wendy Pennycook at Aviation Mgt. C - Continue literature review. - Review John Nishi's comments on last years report if available and make corrections where necessary. - Follow up on re-installation of Aspen & Pathfinder programs as well as any presentations. C Programs Loaded - Do pay sheet. C 	<ul style="list-style-type: none"> - Firm up meetings with communities to be scheduled either for week of December 4 - 8 or 11 - 15. C - Let Deborah know results so she can go too. C - Letters to above. C - Start initial contacts with other groups; <p>Fort Providence C Kakisa C Trout Lake Jean Marie River</p> <ul style="list-style-type: none"> - Ensure presentations are loaded onto the laptop. C - General letter and 'If You see a Bison' poster to interested groups. C - Put together a presentation either on power point or otherwise suitable for school age children between the ages of 10 and junior high level. Working on it. - Dry run the presentations. C
December 4 to 8	<ul style="list-style-type: none"> - Contact Evelyn Krutko, Robert Sambelle and other possible observers for the shoreline patrols, and maybe for the surveillance work later. C - Follow up on the Aspen/pathfinder issue. Complete 	<ul style="list-style-type: none"> - Liaise with Parks Canada and receive any input they may have. C - Continue with follow up telephone calls & letters to groups. C - Possibly go to Hay River to meet with WPFN & KFN. Dates not yet set. C

Appendix F:

2007/2008 Work and Communications Plan

Weekly Period	Work Plan	Communications Plan
November 20 to 24	<ul style="list-style-type: none"> - Review last years program and become familiar with changes & or needs. ongoing - Complete tender for the shoreline patrol A/C and ensure contract is awarded. C - Complete work planning for the budget, workload and comm. Plan. C - Complete paperwork for TSO with Gladys for self. C - Start tender process for Semi & Comp Surveys. C - Start literature review. C - Review Parks/GNWT MOU. C - Investigate the possibilities of obtaining a GNWT Credit Card. C - Outlook account established. C 	<ul style="list-style-type: none"> - Develop a communication record similar to last year and update. C - Initial contacts with communities with a view to visiting two at least before Christmas. C <p>Consider West Point FN and K'atlodeeche First Nation. Update Community/band telephone & address list. C</p>
November 27 to December 1	<ul style="list-style-type: none"> - Letter & Poster out to Loyd Chicot C - Contact River Front Convenience Store re accommodation. C - Contact WPFN about meeting December 6th or 13th. C - Contact K'atlodeeche, Keith Marshall. C - Complete tender request and forward to Wendy Pennycook at Aviation Mgt. C - Continue literature review. - Review John Nishi's comments on last years report if available and make corrections where necessary. - Follow up on re-installation of Aspen & Pathfinder programs as well as any presentations. C Programs Loaded - Do pay sheet. C 	<ul style="list-style-type: none"> - Firm up meetings with communities to be scheduled either for week of December 4 - 8 or 11 - 15. C - Let Deborah know results so she can go too. C - Letters to above. C - Start initial contacts with other groups; <p>Fort Providence C Kakisa C Trout Lake Jean Marie River</p> <ul style="list-style-type: none"> - Ensure presentations are loaded onto the laptop. C - General letter and 'If You see a Bison' poster to interested groups. C - Put together a presentation either on power point or otherwise suitable for school age children between the ages of 10 and junior high level. Working on it. - Dry run the presentations. C
December 4 to 8	<ul style="list-style-type: none"> - Contact Evelyn Krutko, Robert Sambelle and other possible observers for the shoreline patrols, and maybe for the surveillance work later. C - Follow up on the Aspen/pathfinder issue. Complete 	<ul style="list-style-type: none"> - Liaise with Parks Canada and receive any input they may have. C - Continue with follow up telephone calls & letters to groups. C - Possibly go to Hay River to meet with WPFN & KFN. Dates not yet set. C

		<ul style="list-style-type: none"> - Check into the poster and the pamphlet situation. C - Contact the schools re potential visits either just before Christmas or in the New Year: <p>Diamond Jenness, Hay River C Kakisa when we go there. C</p>
December 11 to 15	<ul style="list-style-type: none"> - Arrange with Dallas to install GIS 9.xx on the desktop. C - Follow up on the Tender awards for the Semi & Comp Surveys, which should be opened by Friday. C - Start re-construction of our maps for the yearend report. C - Reconstruct the Final Report for inputs for this year. C 	<ul style="list-style-type: none"> - Continue contacts with communities. - Contact Enterprise to set convenient time to visit. IC - Possible visit to Hay River if not done last year. C
December 18 to 22	<ul style="list-style-type: none"> - Set up directories for data entry; Shoreline patrol and Surveillance surveys. Go to HY Dec 19 to check ride patrol. C - Review manuals for Aspen & Pathfinder C - Dry run the Aspen program with Pathfinder with Nahum and work through the entire process. C - Shoreline patrol and entries. C - Check into Pay sheets for the observer. C - Arrange Accommodation for the Semi-Comp & Comp Surveys. C - Review/receive bids on the Semi-Comp & Comp A/C tenders. C 	<ul style="list-style-type: none"> - Construct Posters missing from last years program. C
December 25 to 29	<ul style="list-style-type: none"> - Christmas break & Doney Days. - Shoreline Patrol & Entries Dec 31. C - Pay day and complete pay sheets for observer. C 	
January 1 to 5	<ul style="list-style-type: none"> - Back to work. - Shoreline patrol Jan 4 & data entry. C - Continue reconstructing maps in GIS. C - Investigate the possibility of using OZI in the final report. Not Done 	<ul style="list-style-type: none"> - Complete letters to groups. C
January 8 to 12	<ul style="list-style-type: none"> - Shoreline Survey Jan 11 & Data Entry. C - Complete the GIS templates for the reconstructed maps from last year. C - Complete pay sheets for self and the observer. C 	<ul style="list-style-type: none"> - Set up meetings with; Kakisa C Fort Providence C Jean Marie Not Done Trout Lake Not Done - Investigate the BCA web site issue (Doug Hartt). C - Start checking into Radio Broadcasts. C - Possibly set up to visit schools. C - Confirm meetings with K'atlodeeche.

		Providence & Metis # 52. C - Meet with Parks Canada 10:30 Jan 12/07. C
January 15 to 19	- Shoreline Survey Jan 18 & Data entry. C - Locate and complete casual hire forms for potential observers for the Semi-Comp Survey. C - Continue checking waypoints where necessary. C	- Meet with community groups if possible. C > K'atlodeeche Jan 17, 1:30 pm C > Ft Providence Jan 17, 7:30 pm C > Hay R Metis, Library Jan 18, 2:00 pm C - Continue to follow up with Community Groups where necessary. C - <u>Confirm next week's meeting with Kakisa. C</u>
January 22 to 26	- Continue checking waypoints for GPS. C - Shoreline patrol Jan 25 & data entry C - Map Shoreline patrol sightings. C - Continue reconstruct maps as required. C - Check for errors. C - Enter time sheets as required. C	- Continue contacts with other communities. C - Follow up with other public/Media issues as required. C - Complete Radio ads and expedite. C - Meet with the Kakisa Lake Jan 24/07 Community, Chief Loyd Chicot. C - Visit Kakisa Lake School. C Feb 28
January 29 to February 2	- Start to develop routes from last year, making adjustments where necessary. C - Shoreline patrol Feb 1 & data entry C - Map Shoreline patrol sightings. C	- Continue any follow up for potential group meetings. C - Continue to follow up the Web site issue. C - Continue to follow up on the radio broadcasts. C
February 5 to 9	- Liaise with WBNP re input into the Semi-Comp Survey next week. C - Dry run the survey locally and collect data using the Fort Smith Map Sheet. C - Nahum may want to be involved. - Shoreline patrol Feb 8 & data entry C - Map Shoreline patrol sightings. C - Complete pay sheets for the observer and self. C	- Group meetings should be complete otherwise continue after the Comp Survey in March. C - Continue to follow up the Web site issue. C - Continue to follow up on the radio broadcasts
February 12 to 16	- Semi-Comprehensive Survey completed. C - Complete time sheets for casuals used in the survey. C - Begin data collection & compilation from survey. C - Error checks. C	- Possible school visit; Chief Jimmy Bruno. Not Done -
February 19 to 23	- Data compilation, error checks and mapping continue for semi-comprehensive survey. C - Shoreline patrol Feb 22 data entry & mapping. C - Complete entries for the final report.	- Follow up with other public/Media issues as required. C - Presentation at Diamond Jenness Hay River. C

	<ul style="list-style-type: none"> - Address other issues as they arise. C - Complete pay sheets for the observer and self. C - Error checks. C 	
February 26 March 2	<ul style="list-style-type: none"> - Data compilation, error checks and mapping continue for semi-comprehensive survey. C - Shoreline patrol Mar 1, data entry & mapping. C - Complete entries for the final report. C - Address other issues as they arise. C 	<ul style="list-style-type: none"> - Follow up with other public/Media issues as required. C
March 5 to 9	<ul style="list-style-type: none"> - Complete pay sheets for the observer and self. C - Shoreline patrol Mar 8, data entry & mapping. C 	
March 12 to 16	<ul style="list-style-type: none"> - Comprehensive Survey Final Preparation. C - Participate in Collection Fort Providence. C 	
March 19 to 23	<ul style="list-style-type: none"> - Complete pay sheets for the observer and self. C - Comprehensive Survey completed. C 	
March 26 to 30	<ul style="list-style-type: none"> - Shoreline patrol Mar 29, data entry & mapping. C - Start Comprehensive survey data entry, mapping & manipulation. C - Address other issues as they arise. C 	<ul style="list-style-type: none"> - Radio Adds out for the next 4 months with CBC, CJC, CJOK. C
April 2 to 5	<ul style="list-style-type: none"> - Possible shoreline patrol wx permitting. C - Complete pay sheets for the observer and self. C - Easter break. 	
April 9 to 13	<ul style="list-style-type: none"> - Data and mapping entries continues for comprehensive survey. C - Complete first draft of final report. C - Address other issues as they arise C - Fly Shore Line Patrol to access snow & Ice Condition. C 	
April 16 to 20	<ul style="list-style-type: none"> - Data entry & Mapping. BC - Final Report writing. 1st draft complete. C - Casual time sheets entered. C - Complete pay sheets for the observer and self. C - Possible short-term contract for Shoreline flying. Not Necessary - Address other issues as they arise. C 	
April 23 to 27	<ul style="list-style-type: none"> - Final Report writing. C - Address other issues as they arise C 	
April 30 to May 4	<ul style="list-style-type: none"> - Complete pay sheets for the observer and self. - Final Report ready for review. - Annual Leave taken as acquired. 	

Appendix G:

Record of Communication to Bands

Organization	Date	Description of Correspondence
Hamlet of Fort Providence	12/12/07	<ul style="list-style-type: none"> - Made contact with Hamlet office Patty Bouvier & Susan Christie. - Reserved hall rental cost \$200.00. - Will send Letter, e-mail & Posters.
	13/12/07	<ul style="list-style-type: none"> - Letter & Posters sent.
Parks Canada - WBNP	21/11/07	<ul style="list-style-type: none"> - Contacted Parks this, left message for Stu Mac Millan
	26/11/07	<ul style="list-style-type: none"> - Discussed having a meeting Friday November 30, 07
	03/12/07	
	04/12/07	<ul style="list-style-type: none"> - E-mail to Stu confirming meeting & outline of discussion items. - E-mail to Stu with the outline of what we discussed.
	07/12/07	
	07/01/08	<ul style="list-style-type: none"> - Reply from Stu on some discussion changes, reply back to Stu with agreement & changes.
	25/01/08	<ul style="list-style-type: none"> - Notified Rhona of the meetings. - E-Mail sent to Stu & Rhona to let them know about the January meetings in JP & HY. - E-mail cc'd to Rhona re Jan 29 meeting as part of informing Troy & Jack
Deh Gah Got'ie Dene Council Fort Providence	22/11/07	<ul style="list-style-type: none"> - Letter w Poster info to Berna Landry.
	13/12/07	<ul style="list-style-type: none"> - Letter & Posters sent re the Public Meeting Jan 9/08.
Fort Providence Metis Council – Local 57	23/11/07	<ul style="list-style-type: none"> - Letter & Posters to Albert Lafferty.
	11/12/07	<ul style="list-style-type: none"> - Letter & Posters sent Re public Meeting Jan 9/08

Fort Providence Resource Management Board Fort Providence	22/11/01 06/12/07	<ul style="list-style-type: none"> - Letter & Posters to Priscilla Canadien. - Talked to Priscilla, she will check with the council meeting Dec 12 or 13 and get back to me when the best dates are.
	12/12/07	<ul style="list-style-type: none"> - Contacted by Priscilla, Can have a meeting Week of Dec 7 to 11th. Contact Hamlet for the hall & letters to the Metis, Band & Hamlet. Will probably send Posters.
	09/01/08	<ul style="list-style-type: none"> - Meeting in the evening at the JP Hall.
Tthedzeh K'edeli First Nation Jean Marie River	26/11/07 18/12/07	<ul style="list-style-type: none"> - Letter & Posters sent to Stanley Sanquez - Received a telephone call from Sanquez and returned the call Dec 21,07, Jan4/08, jan7/08 and will call next Monday Jan 14,08.
	04/01/08	<ul style="list-style-type: none"> - Called Chief Sanquez. Out until Jan 14/08.
	14/01/08	<ul style="list-style-type: none"> - Called Chief Sanquez & left Message.
	15/01/08	<ul style="list-style-type: none"> - Rec'd call from Chief Sanquez. Discussed tags and poss presentation/visit. Asked for a fax outlining my plans contact nos, title etc. - Letter to Chief Sanquez written & faxed.
Liidlil Kue First Nation Fort Simpson	28/11/07	<ul style="list-style-type: none"> - Letter & poster to Keyna Norweigan.
Metis Local #52 Fort Simpson	29/11/07	<ul style="list-style-type: none"> - Letter & posters to Marie Lafferty.
Ka'a'gee Tu First Nation Kakisa	22/11/07	<ul style="list-style-type: none"> - Letter & Posters to Loyd Chicot.
Sambea' K'e Dene Band Trout Lake	26/11/07	<ul style="list-style-type: none"> - Letter & posters sent to Dolphus Jumbo.
West Point First Nation Hay River	27/11/07	<ul style="list-style-type: none"> - Letter to chief and council. Not sure if they are functioning.
	07/01/08	<ul style="list-style-type: none"> - Letter & Poster sent re Jan 29 meeting.
K'atlodeeche First Nation Hay River	27/11/07 05/12/07	<ul style="list-style-type: none"> - Letter & posters sent to Chief Alex Sunrise. - Called Keith Marshall out until Friday left a message with Victoria Martel.
	06/12/08	<ul style="list-style-type: none"> - Called Victoria Martel out until Monday.
	08/01/08	<ul style="list-style-type: none"> - Letter & posters sent for January 29 meeting.
Hay River Metis Nation Hay River	27/11/07 05/12/07	<ul style="list-style-type: none"> - Letter sent to Vern Jones with Posters. - Talked to Belinda, next week will not work but maybe some time in January, will send e-mail suggest dates. - E-Mail to Belinda explaining the BCA briefly and

	07/01/08	<ul style="list-style-type: none"> - asking for response on dates. - Talked to Vern Jones re confirming dates for end of January Mtg. - Letter & posters sent from Jan 29/08 meeting.
Enterprise Settlement Council Enterprise	27/11/07 05/12/07	<ul style="list-style-type: none"> - Letter and Posters to Mayor Allan Flammond - Talked to Scotty Edgerton and received invite to come to a council meeting Monday Dec. 10th. - Sent -mail confirming & also poster.
Fort Resolution Metis Council Fort Resolution	22/11/07 05/12/07 06/12/07 07/01/08 16/01/08 18/01/08 23/01/08 25/01/08 28/01/08	<ul style="list-style-type: none"> - Letter w Posters sent to Kara King. - Attempted call will try later as no answer. - Talked to Faith in the office, Kara was out but Faith will have her call tomorrow. - Called but no Contact. - Rec'd a letter from Kara King dated December 10th. Called back to discuss as I had already met with the people in Ft Res. Including some of the Metis. Were that still interested. Kara was out & would get back to me. - Called Kara King, left message, asked to have her return my call. - Called for Kara King again, told she was out, left a message. - Called Kara King, no response. - Called Kara King, not available, explained the situation, left message for a return call, no response. - Called Kara King, Left message.
Deninoo Community Council Fort Resolution	23/11/07 05/12/07 06/12/07	<ul style="list-style-type: none"> - Letter & Posters sent to Elizabeth Ann McKay. - Called council & Housing as Elizabeth Ann works there ... no answer. - Contact made with Elizabeth explained a bit the circumstances and decided to work through Tausia. - Will call tomorrow. - Talked to Tausia Lal, Possibly have a meeting Dec 18 at 7 pm at the hall, Cost \$400.00, Send Posters & e-mail.
Deninu K'ue First Nation Fort Resolution	28/11/07	<ul style="list-style-type: none"> - Letter & Posters to Chief Louis Balisllie.

Appendix H:

Record of Comments from Community meetings;

West Point First Nation

Wednesday December 13, 2006

Five Members present

- Bison have been seen on the east side of the Liard River near Fort Liard.
- Availability for observers.
 - o James Cayen
 - o Robert Buckley

K'athlodeeche First Nation

Wednesday January 17, 2007

No show from Community even though the event was advertised for a month.
Attempted to meet again in February, but still no interest.

Fort Providence Resource Management Board Wednesday January 17, 2007.

Seven Members Present

- Wolves appear to be increasing as the Bison have increased.
- The Wolves appear to be bigger?
- How to do captures?
- Why not do ground Patrols?
- Get Message out that any Resident hunter can shoot in Bison in the BCA.
- Install Signs at the Ferry and at the Ice Crossing.
- Why is Park's Canada involved?

Hay River Metis Council

Thursday January 18, 2007

Twelve members present

- Are Bison tested that hang around the towns?
- Interest in performing as observers.
 - o Henry Collins

Diamond Jenness High School

Thursday & Friday February 22 & 23, 2007

Four separate classes presented over the two days. Approximately 80 students.

- How does the project justify the cost?
- Is it never ending?
- Why not just remove the Bison in WBNP?

Kakisa

Wednesday February 28, 2007.

Two band members plus the chief and 8 school children and the teacher.

- Has there been an increase or a decrease in Bison numbers?
- What would be the cause of the decrease?

Hamlet of Enterprise

Monday December 10, 2007

Met with the Hamlet Council

14 people present. Those in attendance included non-council members.

A number of questions were raised as follows;

1. Why do predators not get the diseases bison carry?
2. What is the Anthrax problem?
3. Can humans get Anthrax?
4. Should I be concerned about Anthrax when I take my family into the forest?
5. What happened at Hook Lake? (Ranch?)

Questions 2 to 4 were answered by e-mail through the SAO, Scott Edgerton.

Question 5. Was answered at the meeting and a follow-up note was written to Scott Edgerton for question 1.

Fort Resolution

Tuesday December 18, 2007.

8 people were present.

Not many comments. Requests were made for copies of the presentation notes and the location of the BCA Web Site on the Web.

Fort Providence Public Meeting

Wednesday January 9, 2008.

9 persons were present.

- Concern about the capacity to hunt is limited to a few tags.
- Concern that there are lots of bison but fewer caribou.
- There are too few tags for the community.
- Is there any change in the wolf populations?
- Why are shoreline patrols not done by snowmobile?
- Is there a tagging system for bison that are removed from the Community?
- The cost of insurance relating to bison damage in the community is a concern.

- There is a concern that predators will follow the bison into the community.
- Buffalo do cause damage in the community.
- Bison in the community affect pets, i.e. Dogs.
- Buffalo leave dung all over the place.

The questions were answered verbally at the meeting.

The Hay River Centennial Library Public Meeting Tuesday January 29, 2008.

Four people were present including the local MLA Jane Groenewegen.

Letters were sent out prior to this meeting to:

- The Chief Sunrise Education Center
- The Hay River Métis Government Council
- The West Point First Nation
- The Kathlodeeche First Nation
- Town of Hay River

- Could cattle be carriers of Brucellosis and Tuberculosis and could that affect the BCA?

- The Territorial Farmers Association is interested in bison issues.

- Notes and information were sent to the TFA.

The H R C L Public Meeting with Parks Canada Thursday February 28, 2008.

A presentation was made in cooperation with Parks Canada accompanied by Birch Howard and Rhea Colman of PC. There were four people in attendance.

Diamond Jenness High School Friday February 29, 2007.

A grade 10 Science and a Science 15 class were given a presentation of the BCA plus some career information. This was arranged with the help of Kim King of Landa Aviation. Approximately 50 students were reached.

